TRILEPIDEA

NEWSLETTER OF THE NEW ZEALAND PLANT CONSERVATION NETWORK

Please send news items or events to events@nzpcn.org.nz
Postal address: P.O. Box 16-102, Wellington, New Zealand

E-NEWSLETTER: NO 84. NOVEMBER 2010 Deadline for next issue: Wednesday 15 December 2010

President's Message

The Treasurer, Mike Oates, and I met with the Minister of Conservation, Hon. Kate Wilkinson, on 12 October to discuss the legal protection of threatened plant species. We asked that legislation be developed to protect threatened species and about how to set up a process to achieve this. Additional funding for threatened species work on private land was also raised. The Minister has some concerns about the impacts of threatened plant legislation on private landowners, but was open to further discussion about how such legislation could work. She has agreed to another meeting about possible legislative structures that could protect threatened plant species. I will keep you informed in the newsletter about this important issue. We also mentioned that we would approach her about the Mackenzie Basin issue in the near future.

The conference held in early October was a great success, according to the complimentary feedback I received from participants. A few of the presentations at the conference touched on concerns about plant conservation and the land tenure review process in the South Island. At the AGM, a resolution was passed that "the NZPCN make a national statement advocating for the protection of the indigenous biodiversity of the Mackenzie Basin, especially threatened and uncommon plants, and highlighting the on-going loss of biodiversity lowland and montane basin floor biodiversity in that area". The conference participants were unanimous in their support of the resolution. As a first step, NZPCN is currently gathering information about the native flora values in order to prepare a values paper.

I'd like to welcome three new members to the NZPCN Council: Owen Spearpoint, Kerri Gillibanks and co-opted member Jesse Bythell. Two members who stood down this year were Mike Thorsen (who is moving overseas) and Danielle Hancock (who will soon be on maternity leave). We are very grateful to both of these Council members for the contributions they have made to NZPCN. Amongst other things, Mike was involved in the website development while Danielle provided NZPCN reports for the Australian Plant Conservation magazine. We wish them all the best in their future endeavours.

Philippa Crisp
Greater Wellington

Apology

The President's report in the October issue of *Trilepidea* originally had an omission; David Norton's name was not listed as one of the authors of the *Threatened Plants of New Zealand* book. The President and the Network apologise to David for this omission. The website file of the issue was corrected soon after the omission was brought to our notice. If you retained an electronic copy or printed off a hard copy immediately you received the notification that the issue was available, please save a correct copy or correct your hard copy (see www.nzpcn.org.nz).

PLANT OF THE MONTH - *Metrosideros albiflora*

Plant of the Month for November is *Metrosideros albiflora* (akatea, white rata). This climbing rata is endemic to the northern portion of the North Island where it ranges from Te Paki south to Pukemokemoke (north of Hamilton) and the northern Kaimai Ranges.

It is common in kauri forest, using its roots to climb to 10 m or more on the trunks and branches of surrounding trees. The leaves are rather larger than other climbing rata species (up to 90 mm long by 35 mm wide); glossy mid green on the upper surface and paler beneath. Small white flowers are produced in late spring and early summer followed by small urn-shaped capsules.

Metrosideros albiflora is not often seen in cultivation and has a reputation of being difficult to grow. It can be grown from seed and cuttings and prefers to be planted in a warmer site with adequate light, close to something to grow on. The Network fact sheet for *M. albiflora* may be found at: http://www.nzpcn.org.nz/flora_details.asp?ID=979

Three new endemic scale insect species described from New Zealand's pygmy mistletoes

Rosa Henderson (hendersonr@landcareresearch.co.nz), *Amir Sultan* (a.sultan@massey.ac.nz) *and Alastair Robertson* (a.w.robertson@massey.ac.nz)

Three new endemic scale insect species specific to New Zealand's pygmy mistletoes (genus *Korthalsella*), *Eriococcus korthalsellae* (Eriococcidae), *Leucaspis albotecta* and *L. Trilobata* (Diaspididae) have recently been described in a paper by Henderson et al. (2010). The felt scale, *Eriococcus korthalsellae*, was recorded on all three *Korthalsella* species, whereas the armoured scales *Leucaspis albotecta* and *L. trilobata* were recorded on *K. salicornioides* and on *K. clavata*/*K. lindsayi* respectively. Given the patchy occurrence of pygmy mistletoes in fragmented habitats, these insects are also presumably quite rare and therefore these associations highlight the importance of conserving the declining populations of New Zealand's mistletoes in order to save the rare insect fauna entirely dependent on them. *Leucaspis trilobata* is currently known only from a few locations in the southern South Island. The paper also reports the first records of adventive (exotic) scale insects on *Korthalsella* species in New Zealand: *Ceroplastes sinensis*, Chinese wax scale, *Coccus hesperidum*, soft brown scale, *Saissetia coffeae*, hemispherical scale, *S. oleae*, black scale (Coccidae), and *Aspidiotus nerii*, oleander scale, *Hemiberlesia lataniae*, latania scale, *H. rapax,* greedy scale (Diaspididae). There are also the first records of three native scale insects: *Kalasiris perforata* (Coccidae), *Eriococcus pallidus* (Eriococcidae) and *Paracoccus glaucus* (Pseudococcidae).

Reference

Henderson, R.C.; Sultan, A.; Robertson, A.W. 2010: Scale insect fauna (Hemiptera: Sternorrhyncha: Coccoidea) of New Zealand's pygmy mistletoes (*Korthalsella*: Viscaceae) with description of three new species: *Leucaspis albotecta, L. trilobata* (Diaspididae) and *Eriococcus korthalsellae* (Eriococcidae). *Zootaxa* 2644: 1–24.

Progress toward a revision of *Kunzea ericoides* - a new infrageneric classification of the genus

Peter J. de Lange, Department of Conservation, (pdelange@doc.govt.nz)

As progress toward finalising a revision of the New Zealand members of the *Kunzea ericoides* complex draws to a close, a new paper (de Lange et al., 2010), which clarifies the relationship of this species complex to other *Kunzea* and tidies the infrageneric classification of the genus, has just been published.

Fig. 1. *Kunzea sinclairii* endemic to Great Barrier Island where it is a specialist of rhyolite rock habitats.

Kunzea ericoides, in a broad sense (manuka, rawiri, or kanuka), is a widespread, polymorphic tree endemic to New Zealand (de Lange & Murray 2004; de Lange et al. 2005; de Lange 2006a,b, 2007a,b;). In 1983, it was moved from *Leptospermum* to *Kunzea* when it was recognised that it and a number of Australian species were incorrectly assigned to *Leptospermum* (Thompson 1983). Unfortunately, Thompson, who was then engaged in a revision of *Leptospermum* (see Thompson 1989), was understandably not that interested in resolving the relationships of these various *Kunzea*. So her treatment was one of simple expediency, resulting in the lumping of several Australian and New Zealand endemics under the oldest available name, which just happened to be *Leptospermum ericoides*. As a result, Thompson's circumscription of *Kunzea ericoides* involved a range of what have proved to be valid species, including several Australian endemics (*K. leptospermoides*, *K. peduncularis* and *K. phylicioides*) some of which can be extremely aggressive weeds in that country. Thompson's quick "fix" for *Leptospermum* had far reaching consequences, since a New Zealand endemic (i.e. *Kunzea ericoides*) suddenly became indigenous and as a consequence overnight a very serious weed (see Global Invasive Species Database http://www.issg.org/database, accessed 5 November 2010). This view prevails despite various attempts by this author to rectify it, such that *Kunzea ericoides* is still being touted as a serious weed in New Zealand using Australian data based on allied but quite different species (Singer & Burgman 1999 – their "*K. ericoides*" is actually a mixture of a very localised Victorian endemic *K. leptospermoides* and an unnamed species *K.* aff. *ericoides* (g)). The result is that this New Zealand species complex is being sprayed and killed over large parts of our country by people who genuinely believe the misinformation available on websites such as that above.

Fig. 2. Diversity in the New Zealand *Kunzea ericoides* complex. From left to right, *Kunzea ericoides* var. *microflorum* (two forms – both flowering), *K. ericoides* var. *linearis* (sprig with flower buds), *K.* aff. *ericoides* (b) (showing a vegetative sprig and branchlet with flower buds), *K.* aff. *ericoides* (c) (vegetative material). Image: Geoff Davidson

As people no doubt know, I have been undertaking a revision of the *K. ericoides* complex, working mostly within New Zealand but also from time to time with my colleague Hellmut Toelken in Australia. Some key issues central to this revision have been the confusion over whether *Kunzea ericoides* is correctly placed in *Kunzea* (see Harris 1987a; O'Brien et al. 2000; Petterson 2006), whether it is indigenous or endemic, and whether the various races and species included within it warrant reinstatement and/or formal description at some level of taxonomic rank. Following the publication of Thompson's 1983 paper, in New Zealand, Harris (1987b) made combinations in *Kunzea* for, and reinstated at their equivalent ranks within *Leptospermum*, the New Zealand endemics *Kunzea sinclairii* (Fig. 1), *K. ericoides* var. *linearis* and *K. ericoides* var. *microflora* (see Fig. 2). He also explained in some detail the basis for the change in the genus (Harris 1987a). However, the research Harris started was never completed so it never properly addressed whether the remaining Australian and New Zealand plants referred to *K. ericoides* s.s. were correctly assigned to that species.

Fig. 3. *Kunzea ericoides* var. *ericoides* – which in the strict sense is endemic to the northern third of the South Island. Plants from that part of New Zealand have often been confused with or incorrectly referred to *K. ericoides* var. *linearis*. Image: Mike Wilcox

At the about the time I started my revision some of the key issues noted above had been briefly explored by O'Brien et al. (2000) as a side issue in a paper that was mostly concerned with testing the validity of the *Leptospermum* suballiance. For that study, they used two cpDNA markers and a small sampling of *Kunzea* (four species), from which they reported support for the placement of *K. ericoides* in *Kunzea* (though their sample was not, as it turns out *K. ericoides* at all but another allied, unnamed endemic Australian species); noted that *Angasomyrtus* (an unusual monotypic western Australian genus) was nested in *Kunzea*; and observed that there was an east-west partitioning in the Australian species of the genus. These intriguing results were ones simply crying out for a further in-depth study of *Kunzea*, in particular one that addressed the following five key questions:

1. Can molecular data be used to assist with the development of a more robust infrageneric classification for *Kunzea*?
2. Is paraphyly of *Kunzea*, with respect to *Angasomyrtus* supported or rejected by investigation of additional sequence data from the nuclear genome?
3. Are the geographic clades reported by other workers for *Kunzea* robust to additional taxon sampling and by the analysis of a more variable DNA sequence dataset?
4. Is the current generic placement of *Kunzea ericoides* appropriate?
5. Can DNA-sequence data identify distinct lineages within *K. ericoides*?

The new paper explores these questions using different nuclear DNA markers (rDNA ETS and ITS) and a much larger sampling covering the full diversity of *Kunzea* (i.e. 35 taxa and 22 unnamed informally recognised entities) representing 92% of the range of recognised diversity (formal or otherwise) within that genus (de Lange et al. 2010).

The study found that the combined rDNA ETS and ITS data sets enabled a clearer more predictive infrageneric classification to be established; confirmed that *Angasomyrtus* was better placed in *Kunzea*; and supported (with the exception of *Angasomyrtus*) the geographic partitioning of the genus. More significantly, from the New Zealand point of view, the paper confirms that *Kunzea ericoides* s.s. (Fig. 3) (and its close allies) are correctly placed in *Kunzea*, that *K. ericoides* is a New Zealand endemic (and in the strict sense is confined to the northern third of the South Island) and that other Australian and New Zealand plants placed by Thompson (1983) in *K. ericoides* though allied are distinct from that species. Further there is molecular support for the potential recognition of 13 new segregates from *K. ericoides* s.l. (3 from Australian, 10 from New Zealand (see examples illustrated in Figs 2 & 4). As a result of these findings, *Kunzea* is now formally partitioned into four subgenera and eight sections arranged as follows:

Fig. 4. *Kunzea* aff. *ericoides* (a) – a largely western North Island and north-western South Island unnamed species that specialises in mobile dune systems where it can form (and once did form) extensive forests. Most of these have been destroyed for fire wood and pine plantations, however large examples still exist along the South Kaipara and Pouto Peninsulas. This image shows a decumbent form growing on sand filled ledges on islands off Whahariki Beach. *Kunzea* aff. *ericoides* (a) is a fast growing plastic species which can develop decumbent or tree forms depending on the degree of exposure and mobilty of the surrounding sand. Image: Mike Wilcox

1. *Kunzea* subgenus *Kunzea* sect. *Kunzea* (endemic to eastern Australia)
2. *Kunzea* subgenus *Angasomyrtus* (one species, now *K. salina*, endemic to western Australia)
3. *Kunzea* subgenus *Salisia* sect. *Salisia*, sect. *Floridae*, sect. *Zeanuk* (endemic to western Australia)
4. *Kunzea* subgenus *Niviferae* sect. *Niviferae*, sect. *Pallidiflorae*, sect. Platyphyllae (with sections *Platyphyllae* and *Pallidiflorae* endemic to eastern Australian, and sect. Niviferae shared between eastern Australia and New Zealand)

The next phase, the monograph of the New Zealand species is, I am pleased to say, well underway. In that work I will be recognising 10 species for New Zealand, all endemic, none weedy. In the meantime, I urge you all to put a stop to the widespread spraying and burning of the *Kunzea ericoides* complex in New Zealand. It is indeed true that "bad taxonomy kills", though I stress Thompson can hardly be blamed for this by moving certain *Leptospermum* to the correct genus *Kunzea*. Rather, it is the way in which her work has been interpreted by ecologists and the like that concerns me. We really need to put a stop to the spread of this misinformation before we lose even more biodiversity from this species complex. Already one potentially distinct segregate of *K. ericoides* I found near Lottin Point in 2001 is now possibly extinct following the widespread clearance of its only known site sometime after 2005.

Acknowledgements

These are many and a full list can be found in my PhD thesis (de Lange 2007a). For the phylogeny paper I'd like to thank my co-authors, especially Rob Smissen for his major help in trimming down an epic to a manageable paper. Thanks to Matt Renner for his detailed critique of the penultimate draft, and Hellmut Toelken for sharing his knowledge and doing the Latin diagnoses for the

infrageneric treatment. Geoff Davidson and Mike Wilcox kindly allowed the use of their images of New Zealand *Kunzea* for this article.

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NZPCN's 2010 award recognises an innovative venture that is helping to create living legacies for visitors to one of New Zealand's most iconic sites.

Carolyn Smith, Department of Conservation, Kaitaia (csmith@doc.govt.nz)

Te Rerenga Wairua (Cape Reinga) is a popular destination for Kiwis and overseas visitors alike. For most of us, a photo under the AA sign next to the lighthouse is our memento of the trip. But, thanks to a simple initiative by savvy locals, visitors can now have a lasting souvenir of their visit – literally putting roots down into the soil.

For $20, visitors may choose an eco-sourced native seedling and then plant it into a designated area at Te Rerenga Wairua. Purchasers receive a certificate, postcard and the GPS coordinates of their plant. According to project manager, Wayne Petera, this simple concept has been a massive success.

"People love it. They can email us the coordinates of their plants and we send them photos and progress reports. Visitors are planting trees to commemorate significant events in their lives, for example, birthdays and anniversaries, and even to remember the death of a loved one," says Wayne.

The idea resulted from the need to find more work for the 'Natives' nursery, run by Wayne, following the completion of the Te Rerenga Wairua/SH1 upgrade work. In 2006, the New Zealand Transport Authority (NZTA), with assistance from the Department of Conservation, worked with Ngati Kuri, to establish the nursery as a means of supplying eco-sourced plants for road works along the newly-sealed state highway between Waitiki Landing and Te Rerenga Wairua. This venture also included plants to rehabilitate earthworks and landscaping at Te Rerenga Wairua itself.

Since then, the nursery has thrived, even offering horticulture courses through Northland Polytech. However, with the completion of the Te Rerenga Wairua/SH1 upgrade work in early 2009, the demand for plants had dwindled, prompting Wayne to consider other options for the nursery's continued viability. "I came up with the concept of selling eco-sourced plants to visitors to Te Rerenga Wairua as a means of supporting the nursery and aiding the re-vegetation of the area. I was supported by my sister Tessa, who sadly passed away suddenly in June this year," says Wayne.

With support from Ngati Kuri and a concession from DOC, the idea became a reality. In November 2009, 'Natives' was born. Since opening for business, over 3000 plants have been purchased and located into planting sites around the edge of the Te Rerenga Wairua carpark. The eco-courced plants include coprosma, hebe, flax, ake-ake, pohutukawa and cabbage trees.

Wayne says the support from tourist operators, particularly Fullers Great Sights Bay of Islands and Salt Air, has been fantastic. "The operators see it as an opportunity to contribute back to the environment, so they are actively promoting the venture to their passengers. We are also keen to see independent travellers getting behind it too, as it's about supporting the local economy and the environment – basically enjoying yourself and giving back at the same time," explains Wayne.

Wayne is a firm believer in practising what you preach. Aside from the NZPCN award, Wayne and the nursery have received awards from Weedbusters and the Department of Conservation for the voluntary work his team does controlling weeds at Te Rerenga Wairua, and assisting with dune restoration and threatened plant work for the Department of Conservation. The nursery, as part of the overall Te Rerenga Wairua/SH1 project, also received an international roading sustainability award.

Wayne sees the nursery project as proof of the benefits of integrating conservation with business enterprise. "It doesn't have to be a choice - if you include conservation as a component of your business practice the rewards are tremendous," says Wayne.

And with summer fast approaching, it's a great time to take a road trip north and experience the new and improved Te Rerenga Wairua for yourself. The site has been transformed from a 'lighthouse at

the end of a dusty road' to an awe-inspiring experience. While you're there why not leave a living legacy– a tree in your name – or for a special person in your life. Then sit back and watch it grow!

For more information visit the brand new 'Natives NZ' website, www.nativesnz.co.nz.

Tag Cloud created for NZPCN website

The image was created by www.tagxedo.com. This website reads the HTML of a website homepage (or any piece of writing that you choose) and collects all the displayed words. Words are then tallied and Tagxedo makes a word tag cloud using those words. Tagxedo makes the cloud in a shape chosen by you from the site and sizes the words so that more frequent words will appear bigger. If you would like to create tag clouds for other websites or articles you have written go to the Tagxedo website and follow the instructions.

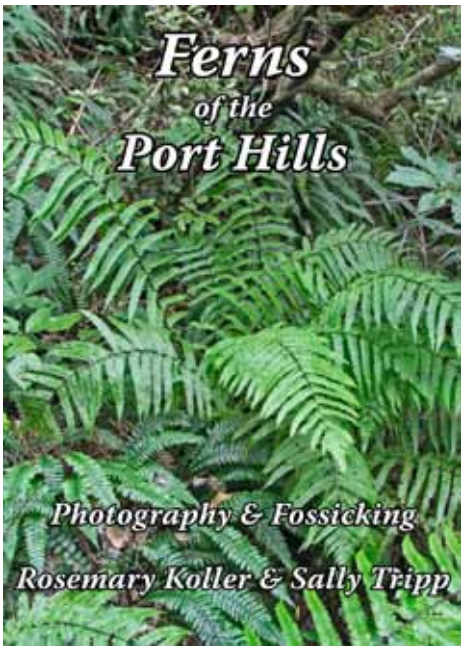
Vote for your favourite plant for 2010

Voting is well under way for this year's favourite native plant. Currenlty, (17 November), tree nettle (ongaonga) is in the lead followed by Chatham Island forget-me-not and bamboo rush. The voting system on the left hand side of the home page (www.nzpcn.org.nz); start voting and encourage your friends, family and colleagues to vote. Each voter has 5 votes to be used on one or more species. Voting closes Sunday 5 December.

Would you like to be a "Plant Ambassador" to advocate for a particular species?

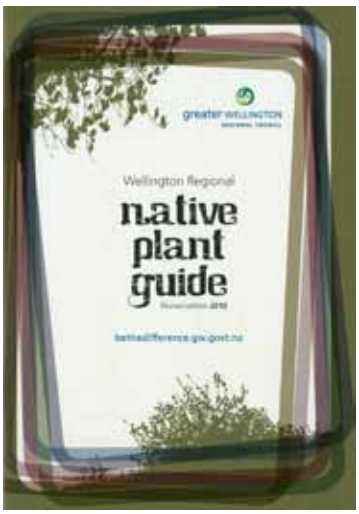
Please email us the name of your chosen species and your name and email address.

New book: *Ferns of the Port Hills* by Rosemary Koller and Sally Tripp



This new book by two network members is about the ferns found on the Port Hills of Christchurch. The book is 131 pages long and contains a short botanical description of each fern plus an 'understorey' (discoveries, incidents and observations). All of the 66 ferns are well illustrated with colour photos, including many close-up shots. Hugh Wilson notes in his foreword: "We are very lucky that Rosemary and Sally chose not only to share what they found by way of informative, readable text and beautiful photography; they also convey their own delicious joy of discovery. Chatty anecdotes unfurl after each description. So this book is both a friendly field guide and an adventure story. This fine little book will help many people discover for themselves the delight and beauty of ferns and champion their conservation on the city's doorstep." Leon Perrie, fern specialist Te Papa, says, "Their identification tips and photographs especially the wonderful close-ups, are a boon for distinguishing the Port Hills ferns, and will also prove useful further afield." The book costs $30 plus $3 postage and packaging. Copies may be obtained from the authors Rosemary Koller, ph: 03 351 4098, email: kollers@orcon.net.nz, or Sally Tripp, ph: 03 329 9752, email: sally.tripp@xtra.co.nz; please contact them for payment details.

Wellington regional plant guide published



Greater Wellington announces the launch of the Wellington Regional Native Plant guide. First published in 1999, the first edition sold over 17,000 copies by the time it went out of print in 2007. Now fully revised and updated this little stunner is available just in time for Christmas. The guide shows how to include local native plants in your garden no matter where in the region it is. Available from November 10 at bookstores and garden centres in the Wellington region the book has clear text, maps, graphics and photos that will whet your appetite for gardening and restoration planting. Published by Greater Wellington Regional Council. A5 Paperback, 56 pages with colour illustrations. RRP $9.95. For trade orders contact orders@pubdist.co.nz

Covenant management training course book now available

Managing Conservation Covenants has just been published by the Network. This is the second module completed by the Network as part of its marae-based plant training course. If you would like to purchase a copy please go to the Network's on-line shop. The price is $30 (Network members), $36 (non-members). This course booklet is 74 pages long and includes chapters on:

- Hatching a plan to manage your covenant
- Fencing to exclude stock and wild animals
- Being wise to weeds
- Revegetation and replanting
- Getting on top of mammal pests and mustelids
- Monitoring your covenant
- Storing information

The third booklet entitled How to manage a plant nursery and grow native plants is now being designed and will be published early in 2011.

Annual Subscriptions

The AGM passed the proposal to raise the subscriptions. The new rates are Individual, $40; Student/ Unwaged, $15; NGO, $60; Corporate (6 members), $250; Corporate, (25 members) $500 (no change). Invoices will be sent to NGO and corporate members soon; Individual and Student/ Unwaged members will get reminders later in the month (but they are welcome to pay at any time).

UPCOMING EVENTS

If you have important events or news that you would like publicised via this newsletter please email the Network (events@nzpcn.org.nz):

2010 Australian Systematic Botany Society Conference

Monday 29 November to Friday 3 December at Lincoln University. **Theme:** "Systematic botany across the ditch: links between Australia and New Zealand". Subject areas include palaeobotany, biogeography, phylogeny, algae, hybridisation, and biosecurity/weeds.	**For more information see:** www.landcareresearch.co.nz/news/conferences/asbs2010/index.asp or email: ASBS2010@landcareresearch.co.nz

Auckland Botanical Society

Field trip: Saturday 4 December a Pot Luck lunch and botanical exploration of Shakespear Regional Park, Whangaparaoa Peninsula.	**Contact:** Maureen Young, email: youngmaureen@xtra.co.nz
Field trip: Friday 28 to Monday 31 January 2011 the Auckland Anniversary Weekend Camp at Waikawau Bay, Coromandel Peninsula.	**Contact:** Maureen Young, email: youngmaureen@xtra.co.nz

Waikato Botanical Society

Field trip: Saturday 4 December to Dave McNeil's QEII Covenant, Mt Te Aroha (combined with Rotorua Botanical Society) to prepare a species list. **Meet:** the Te Aroha Town Clock at 9:30 a.m. **Grade:** medium.	**Leader:** Kerry Jones, ph: 07 858 1055 (work), 07 855 9700 (home), 027 747 0733 (mob), email: kmjones@doc.govt.nz

Rotorua Botanical Society

Field trip: Saturday 4 December to Dave McNeil's QEII Covenant, Mt Te Aroha (combined with the Waikato Botanical Society). **Meet:** at the car park at 8.00 a.m. or the Te Aroha Town Clock at 9:30 a.m. **Grade:** medium.	**Leader:** Kerry Jones, ph: 07 858 1055 (work), 07 855 9700 (home), 027 747 0733 (mob), email: kmjones@doc.govt.nz

Wanganui Museum Botanical Group

Field trip: Sunday 5 December to the sea cliff tops from Kakaramea to Patea. Meet: 9.15 a.m. outside Police Station, Bell St Wanganui.	**Contacts:** Robyn and Colin Ogle, ph: 06 347 8547, email: robcol.ogle@xtra.co.nz

Wellington Botanical Society

Field Camp: Wednesday 29 December – Friday 7 January 2011 the summer camp in Northern Fiordland jointly with Botanical Society of Otago. **Accommodation:** indoors and camping at Boyds Creek Lodge, c. 40 km NE along SH94 from Te Anau.	**Contact:** Mick Parsons, ph: 04 972 1142, email: mtparsons@paradise.net.nz

Nelson Botanical Society

Field trip: December the pre-Christmas Camp, December 17th to 19, Leatham Valley. **Leaders:** Cathy Jones and Shannel Courtney, Nelson DOC, and Jan Clayton-Greene, South Marlborough DOC. Numbers are limited so book early.	**Contact:** Cathy Jones, ph: 03 546 9499.

Canterbury Botanical Society

Meeting: Friday 3 December at 7.30 p.m. a talk by John Clemens, Curator of Christchurch Botanic Garden. Venue: room A5, Canterbury University.	**Contacts:** Miles and Gillian Giller, ph. 03 313 5315.
Field trip: Saturday 11 December to Mount Herbert (reserve day, Sunday). Meet: at Halswell Domain car park, just off Halswell Road, at 8.15 a.m.	**Contact:** Paul Maurice, ph: 03 351 3488.
University of Canterbury summer course: Practical Taxonomy for Field Biologists BIOL 305. This is an intensive, short summer course designed to meet the need for training in the collection, preparation, and identification of botanical specimens. **Venue:** Mountain Biological Field Station at Cass, Canterbury. **Dates:** Thursday 27 January to Friday 4 February 2011.	**For more information:** visit: www.biol.canterbury.ac.nz/biol305 or contact Dr Pieter Pelser, ph: 03 364 2987 ext 45605, email: pieter.pelser@canterbury.ac.nz

Botanical Society of Otago

Field trip: Tuesday 7 December, to the Old Man Range with the French Botanical Society guided by Mark Hanger. Meet: bottom of the Symes Rd at 11:30 a.m. **Car pool:** available with David Lyttle, ph: 03 454 5470, email: djlyttle@ihug.co.nz.	**Contact:** Mark Hanger, ph: 021 680 524.
Field trip: Friday 10 December to the Botanic Garden for a picnic lunch with the French Botanical Society at 12.15 p.m.	**Contact:** Mark Hanger, ph: 021 680 524.