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 108. NOVEMBER 2012 Deadline for next issue: Friday 14 December 2012

President's message

This is my second to last President's message because I will be stepping down from the role at the coming AGM. It has been an honour to represent NZPCN as its President, but it is time for a change in leadership and a fresh approach. The AGM and Network Awards ceremony are taking place on 29 November, followed by talks by Drs Judith Roper-Lindsay and Colin Meurk on "Bringing natives back to the city". In writing this message, I have been reflecting on the work of both these speakers, not only in Christchurch, but also in the rural landscape. In my current position at a regional council, I find we are facing the same issues as the rest of New Zealand in attempting to manage our landscapes in a way that considers our natural resources and indigenous ecosystems. The role of indigenous plants is a hugely important part of this and of a sustainable future for New Zealand.

Judith mentioned community-based solutions and a sharing of responsibilities and decisions with regard to our natural resources in a New Zealand Ecological Society Presidential address[1] back in 1991. It seems we are only just grappling with these community-based approaches now. Colin's work at Waipara[2] is an example of how communities can make a difference and how we can restore balance in the farming landscapes through reintegrating native plants where possible. Another great example of this is the work at Raglan[3], where, after 17 years of riparian planting (450 km), the health of Whaingaroa Harbour has improved dramatically. These initiatives show that such large-scale projects can be achieved and that the community plays a key role. NZPCN is currently and will continue to play an important part in providing information to assist these projects. The fantastic thing about re-vegetation is that it not only improves biodiversity and habitat for plants, but other organisms and ecosystems benefit, e.g., birds, lizards, fish, estuaries. The cities are also a place where native vegetation can be restored to improve both biodiversity and a "sense of place" for New Zealanders. Come and enjoy the talks about this subject next Thursday.

Philippa Crisp

[1]: http://www.nzes.org.nz/nzje/free_issues/NZJEcol15_2_111.pdf

[2]: http://www.listener.co.nz/commentary/nature-ground-zero/

[3]: http://www.harbourcare.co.nz/

Wahlenbergia – author's clarification

Jessie Prebble (Jessie.prebble@gmail.com)

In the October issue of *Trilipedia*, in my article on *Wahlenbergia*, I did not mean to suggest that the two subspecies of *Wahlenbergia congesta* proposed by Petterson (1997) should be accepted. Our studies using AFLP-fingerprinting support the continued recognition of the morphologically distinct *W. congesta* (using samples of *W. congesta* subsp. *haastii*), but because we did not have any samples of subspecies *congesta* we could not test the status of the two *W. congesta* subspecies. The two subspecies are not currently accepted (de Lange 2006).

Reference

de Lange, P.J. 2006: *Wahlenbergia congesta*. New Zealand Plant Conservation Network Fact Sheet (http://www.nzpcn.org.nz/flora_details.asp?ID=340). Accessed 24 October 2012.

PLANT OF THE MONTH – *GINGIDIA MONTANA*

Gingidia montana. Photo: Mike Thorsen.

Plant of the month for November is *Gingidia montana* (mountain aniseed, New Zealand aniseed). *Gingidia montana* is a perennial herb in the carrot family, the Apiaceae. It is found in both North and South Islands, though is much rarer in the North Island due to its highly palatable leaves being eaten by browsing animals; plants are now confined to more inaccessible locations. It is also found in Australia where it is regarded as an endangered species.

Found in lowland to subalpine scrub up to about 1300 m above sea level, it is usually restricted to cliffs, rock outcrops and seepages above roadsides – places largely free from browsing animals. During spring and summer, its dark-green to glaucescent (blue-green) leaves are overtopped by umbels of white flowers. It makes an excellent garden perennial, easy to grow in full sun or partial shade, in a fertile, well drained, moist soil.

The Network fact sheet for *Gingidia montana* can be found at:
www.nzpcn.org.nz/flora_details.asp?ID=2141

NZPCN conference in 2013

The Network's next conference will be held in Parnell, Auckland from Thursday 23 till Sunday 26 May 2013. As with the Network's previous six conferences, this will be a great opportunity for those involved in plant conservation (research, cultivation, survey and monitoring and education) to come together to share their knowledge and experiences and to network with others.

Six symposia have been selected (see **flyer attached to this newsletter**) that focus attention on several priority plant conservation themes including threatened species recovery and defining and understanding New Zealand's plant life through systematics and research on plant autecology, biogeography, seed banks and plant diseases. Several field trips will be offered including a trip to Rotoroa Island and the Kaipara Harbour. Please circulate the attached flyer around your networks.

Please contact the Network if you can help with organising the conference, if you would like to sponsor the conference (or part of it) or if you have suggestions of people we should invite to speak at any of the symposia. Please also email us (info@nzpcn.org.nz) if you want to be placed on the conference mailing list (**Note:** members need not do this because they will automatically receive information about the conference). A call for papers, posters and displays will be made in due course and more details will be posted on the Network website (www.nzpcn.org.nz) and in the Network newsletter over the coming months. We look forward to seeing you at the conference in 2013.

1.4 million plant records and growing fast

Thanks to Network members all over the country, the number of plant observations on the Network's flora distribution database is growing rapidly. These observations will help determine the conservation status of native plant species with weed management programmes and with seed collection for restoration projects or for the national seed bank. It will also help with understanding the distribution of plants and so help with research on the ecology of the New Zealand flora and with understanding environmental changes such as the impact of a changing climate on plant distribution and phenology. The observations will also be valuable to gardeners wanting to know what to grow.

If you want to help with plant conservation programmes, please start recording your observations of plants on the Network website.

Some recent observations include:

Nertera depressa at Elliot Bush by Matt Ward

Agathis australis at Bovills Bush by Terry van Vaught

Coprosma rhamnoides at Paraparaumu Scenic Reserve by Matt Ward

Ulex europeus (gorse) at Puhinui Creek by Peter de Lange

Parahebe lyallii at Wairio by Jesse Bythell

Anisotome cauticola at Slapjack Creek by John Barkla

Thymus vulgaris at Slapjack Creek by John Barkla

Sonchus kirkii at Allans Beach by Oscar Grant

Netera depressa.
Photo: Jeremy Rolfe

If you want to contribute, please log in to the website using your member username and password and click on "Record a plant" or "Record Phenology" on the left hand side of the home page. Non-members should first register as a phenology recorder.

Thanks to all those recorders who have already logged observations.

Network Annual General Meeting and "Bringing natives back to the city"

The Network's 2012 AGM will be held in the Canterbury Horticultural Centre, Hagley Park, Christchurch, on Thursday 29 November commencing at 5.30 pm. The meeting will include the presentation of the Network's awards for 2012. Following a short break at 7.00 pm, the AGM will be followed at 7.30 pm by talks by two well-known local speakers, Dr Judith Roper-Lindsay (Chair, Greening the Rubble Board of Trustees) and Dr Colin Meurk (Landcare Research). The talks are open to any members of the public interested in plant conservation matters.

Network Council meeting

Preceding the AGM, the Network Council will meet in Christchurch on Thursday 29 November. If anyone has any issue that they would like the Council to discuss, please contact the President, Philippa Crisp (Philippa.Crisp@gw.govt.nz) at least week before the meeting.

Seed dispersal mutualisms and early-stage plant recruitment in New Zealand alpine ecosystems

Laura M. Young (laura.young@canterbury.ac.nz)

Fleshy-fruitedness is present in an unusually high proportion of the total New Zealand alpine flora (12%) compared with other temperate alpine plant communities (Lord, 1999). Because of geographic isolation, the New Zealand flora has, until recently, had an unusual frugivore assemblage with almost no mammalian influence. Instead, it co-evolved in the presence of a largely avian fauna (Holdaway, 1989, Lee et al., 2010), with possible influence by bats, lizards (Whittaker, 1987; Lord and Marshall,

2001; Wotton, 2002) and weta (Duthie et al., 2006). Since the relatively recent arrival (ca. 1280 AD) of humans in New Zealand (Wilmshurst et al., 2008), nearly half the avifauna and a significant proportion of the herpetofauna (lizards) have become extinct (Tennyson, 2010) and many extant species have become uncommon or range-restricted (Clout and Hay, 1989). Plant-frugivore relationships are therefore likely to have undergone major changes (Holdaway, 1989; Lee et al., 1991; Thorsen et al., 2009). Other key changes have potentially come about since the introduction of mammalian and avian herbivores into New Zealand, mostly throughout the past few centuries (Kelly et al., 2010).

Juvenile kea feeding on berries of *Pentachondra pumila* on top of Sugarloaf (1359 m), Cass. Photo: L.M. Young.

The major focus of my PhD research was to understand whether dispersal mutualisms are functioning effectively in the New Zealand subalpine and alpine fleshy-fruited flora with a depauperate resident alpine fauna and current novel frugivore assemblage (in terms of dispersal, germination and establishment). It is likely some extinct birds were important for seed dispersal (Lee et al., 1991). For example, hundreds of intact seeds of 20 fleshy-fruited shrubs (including subalpine *Corokia* and *Coprosma* spp.) have been found in moa gizzards from deposits in North Canterbury (Burrows 1981), and seeds of numerous prostrate and shrubby species have also been extracted from the coprolites of six moa species from the Dart Valley (Wood et al., 2008) and other areas (Lee et al., 2010). Kakapo were once common in the subalpine zone and coprolite evidence shows that they consumed and dispersed some seeds intact (Horrocks et al., 2008). To understand the co-evolutionary relationships between the alpine fleshy-fruited flora and extinct avifauna would be of pivotal importance in order to determine the effects of their loss on plant populations. Such questions are beginning to be answered by Jamie Wood and others at Landcare Research using sophisticated techniques to analyse dietary components in coprolites. My research, however, focuses on the extant fauna, including introduced species, and their role in seed dispersal of the alpine flora.

To determine whether fruits are currently being removed by animals, I measured fruit removal rates in nine species of fleshy-fruited alpine plants from a range of families using cages (no animal access to fruit), lizards/invertebrate access-only cages and control (open-access to fruit by all animals) plants at Cass and Temple Basin near Arthur's Pass in the Southern Alps of New Zealand. Fruit removal under the current suite of available native and exotic frugivores varied depending on species. Overall, the mean percentage fruit removal ranged from 25-60% in open-access treatments, 21-33% in lizard-only access treatments and 2-22% in animal-exclusion cage treatments. The largest difference in mean final percentage fruit removal between open-access and cage treatments was for the shrub *Aristotelia fruticosa* (60.3% vs 2.6%, respectively). The lowest levels of fruit removal were around 25% for shrubby *Corokia cotoneaster* and the conifer *Podocarpus nivalis*. There was no difference in final percentage fruit removal between lizard-access cages and all-animal exclusion cages at Temple Basin, suggesting that fruit removal by lizards was not important at that site. It has been suggested in previous literature (e.g., Kelly et al., 2004; Robertson et al. 2008) that delays in fruit removal may have no fitness consequences so long as fruits are being removed at some point before they rot and fall below the parent plant. In this respect, mean overall percentage fruit removal levels seen in this study (25-60%) by available seed dispersers can thus be regarded as adequate.

I investigated the relevance of kea and other birds as seed dispersers in New Zealand's alpine ecosystems. Previously, it has been assumed that like other parrots, kea would destroy most of the seeds they eat, thereby contributing little to seed dispersal. However, I showed, using field-based foraging observations coupled with faecal analyses, that kea are by far the most important extant alpine avian frugivore. Kea selected more fruiting species (21 vs 17 species), consumed more fruit, and dispersed more seeds (8137 vs 795) than all other birds combined. Rates of seed predation by kea were extremely low (<5%) and evident in only 25% of species eaten. Kea are the only species that make frequent long-distance flights within and between mountain ranges. Hence, much of the effective long-distance dispersal of the alpine flora may be currently performed by kea. However, <5000 kea remain in the wild, potentially putting alpine seed dispersal mutualisms at risk (see Young et al., 2012).

Using a community-level approach, I also investigated the roles of the exotic mammalian fauna in seed dispersal of the alpine fleshy-fruited flora. Fixed-area plots covering 3000 m2 and representing a range of vegetation types (shrub, open grassland, mat and herbfield, rocky scree and beech fragments) were monitored regularly by counting and clearing all animal pellets over two fruiting seasons. I assessed the spatial patterns of faecal deposition in relation to dominant habitat and subsequent germination sites (see below). Faecal analyses revealed large quantities of fruits eaten, particularly by small mammals (possums, hares, rabbits and hedgehogs), sheep and pigs. Seeds from 67 plant species were found in the faecal samples, with large numbers of these from fleshy-fruited alpine plants. There were very low levels of seed predation, with most animals dispersing >95% of seeds intact. Possum faeces contained the highest numbers of seeds per pellet and dispersed the most seeds (>160 m2 yr-1), relative to sheep and hares, which each moved roughly 50 seeds m2 yr-1. However, possums largely dispersed seeds into beech forest habitats that are unsuitable for regeneration of most alpine plant species, whereas sheep and hares/rabbits dispersed most seeds to open grassland, also less than ideal regeneration microsites.

I used field experiments to quantify the effects of various components of seed dispersal quality on germination, seedling survival and growth. I measured the single and interactive effects of: (i) fruit pulp removal (yes/no), (ii) seed deposition microsite characteristics (partial shade/light), (iii) vegetative competition (turf dug/not), and (iv) seed predation/seedling herbivory (caged/uncaged). Experiments were followed over 3.5 years for eight subalpine fleshy-fruited species (*Acrothamnus colensoi*, *Aristotelia fruticosa*, *Coprosma petriei* and *C. propinqua*, *Corokia cotoneaster*, *Gaultheria depressa*, *Leucopogon fraseri* and *Podocarpus nivalis*). Only three species began to germinate within one year of sowing, but all species experienced at least some germination after 3.5 years. Percentage

Mixed association of prostrate fruiting alpine species, *Pentachondra pumila* (red) and *Leucopogon fraseri* (orange), family Ericaceae. Photo: L.M. Young.

seed germination, seedling survival and height growth after 3.5 years was significantly higher in partially-shaded microsites (edge of manuka shrub) than high-light open grassland areas for seven of the eight study species. Most of these high-altitude species were very slow to germinate and the full germination potential, effects of treatments and microsite on seedling survival and growth of many species may not be realised for a long time.

In mountain habitats, introduced mammals are dispersing large numbers of seeds, perhaps partially compensating for absent native birds and lizards. However, mammals often disperse seeds to unsuitable microsites and limited distances, especially compared with the native kea. There is a large scope for further research in this area because, until now, very little research has been done on plant-animal interactions such as seed dispersal and pollination in above-treeline ecosystems of New Zealand. If you wish to find out more on this area, or want a copy of my thesis or papers on seed dispersal by kea or falcons (see Young and Bell, 2010), feel free to email me any time at laura.young@canterbury.ac.nz.

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Alford Forest

Recently, Ashburton District Council and foothills landowners in the Alford Forest Area teamed up to re-constitute a monitoring programme of the native beech forest in the area. This is an initiative of the Ashburton District Biodiversity Action Plan, and members of the Ashburton Biodiversity Working Group would like to share the results. The forest was first surveyed in 2001 and was resurveyed in mid 2012. The permanent plots established by Boffa Miskell (Boffa Miskell 2001) were resurveyed by Michael Harding. The surveys used the Quick Plot method (Handford 2000). The major points of the report are as follows.

Between 2001 and 2012, the data indicate that the number of trees (i.e., stems greater than 3 cm DBH at a height of 1.35 m) increased in four plots, remained the same in two plots and declined in six plots, between 2001 and 2012. Total DBH increased in eight plots and declined in four plots. Substantial increases in total DBH were recorded at two plots and substantial declines in total DBH were recorded at two plots.

The increase in total DBH (and number of stems) at Plot 02 was largely due to growth of broadleaf (*Griselinia littoralis*), marbleleaf (*Carpodetus serratus*) and beech saplings at the forest margin. The increase in total DBH (and number of stems) in Plot 11 was due to the survival of all tree stems and the recruitment since 2001 of seven new beech saplings. Both plots are fertile sites (Plot 02 on free-draining gravels; Plot 11 on gentle lower slopes) with high light levels (Plot 02 at the forest margin; Plot 11 at an open-canopied site).

The decrease in total DBH in Plot 06 is due to the loss of seven of the 13 stems/trunks since 2001 and no recruitment of new trees. The decrease in total DBH in Plot 09 is due to the loss of 24 of the 40 tree stems/trunks since 2001 and no recruitment of new trees. At Plot 09, the reason for this decline appears to be due to the harshness of the site (shallow dry soils on an exposed ridge) and possibly the age structure of the forest (many young trees). It is also partly due to differences in sampling method since the diameter of a number of living trunks in 2012 were measured as smaller than recorded in 2001. The reason for the decline in Plot 06 is less obvious.

Tree recruitment at forest margins is less clear. Only four plots (01, 02, 05 and 10) are located at forest margins where forest expansion is possible. The other plots are located within the forest or at fenced forest margins where expansion is not possible (e.g. Plots 03 and 04). Of the four forest margin plots, an increase in tree stems was recorded at one (plot 02), no change at two (plots 01 and 10) and a decrease in trees at one (plot 05). As discussed above, the increase at Plot 02 can be attributed to new saplings of broadleaf, marbleleaf and beech at the forest margin.

Meaningful comparisons between plots is not possible because of considerable differences in substrate, drainage, aspect, forest age, forest composition and site history.

The effectiveness of monitoring depends upon accurate measurement and accurate species identification. Though some plant groups (notably the small-leaved species of *Coprosma*) are difficult to identify, most others can and should be identified correctly. Several obvious errors in species identification were discovered during the plot re-measurement. The most important of these are discussed below.

Sycamore

Several deciduous trees are present within Plot 04 (Staveley Camp). When the plot was established in June 2001, these trees would have been without leaves and therefore hard to identify. They were recorded on the 2001 Plot Form as mountain ribbonwood (*Hoheria lyallii*), a species that is not usually present at lower altitudes or on the high plains. Closer inspection of the bark and growth form during the August 2012 re-measurement (the trees had no leaves) revealed that these trees are sycamore (*Acer pseudoplatanus*), an invasive weed species. These species were re-measured and clearly marked with white permolat. They should be removed from the plot.

Beech

Beech trees were recorded on the 2001 plot forms as black beech (*Nothofagus solandri* var. *solandri*) or mountain beech (*Nothofagus solandri* var. *cliffortioides*). The morphological differences between these two varieties are, in many locations, very subtle. Both varieties are recorded in the Protected Natural Areas Programme report for the Mt Hutt Ecological District (Arand and Glenny, 1990). However, in a study of New Zealand beeches, Wardle (1984) recorded only intermediate forms between the two varieties in Mid Canterbury. The 2012 surveyor was unable to confidently confirm the identity of a number of beech trees in the plots as black beech or mountain beech and suspects they are intermediate forms. To avoid giving false confidence, beech trees are recorded on the 2012 plot forms only to species level (i.e. *Nothofagus solandri*) rather than to varietal level.

***Coprosma* species**

Small-leaved species of *Coprosma* can be difficult to identify. Some species have a wide range of growth forms, depending on whether they are shaded beneath the forest canopy or exposed at the forest edge. Distinguishing features can be subtle, such as the location of leaf hairs and the characteristics of stipules. A microscope is often required for confident identification. Though accurate identification of understorey *Coprosma* species may be of limited value for measurement of change in forest canopy and forest spread, correct identification is important for describing forest composition.

The 2001 survey recorded *Coprosma colensoi* in eight plots. The natural distribution of this species is Westland and near the main divide of the Southern Alps in Canterbury (Wilson, 1993). It was not recorded in Mt Hutt Ecological District by Arand and Glenny (1990) and is not recorded as present in Mid Canterbury on distribution maps of small-leaved shrubs (Wilson, 1991). It is most likely that the species recorded as *C. colensoi* in 2001 is *C. rigida*. Both species have leaves with bluntly rounded or slightly indented tips.

The 2012 survey recorded *C. microcarpa* in three plots. This species was not recorded during the 2001 survey. It appears that the species recorded as *C. microcarpa* in 2012 may have been recorded as *C. propinqua* or *C. linariifolia* in 2001.

Coprosma microcarpa. Photo: Jeremy Rolfe.

Blechnum ferns

The 2001 survey recorded *Blechnum vulcanicum* in five plots, frequently as one of the dominant forest floor species. This *Blechnum* species was not recorded during the 2012 re-survey. It is most likely that the species recorded as *B. vulcanicum* in 2001 is *B. procerum*.

Acknowledgements

Michael Harding, the 2012 surveyor, acknowledges the assistance from and thanks Alicia Jenkins (Ashburton District Council) who arranged and administered the project contract; Alan Totty (Alford Forest) for information about the earlier (2001) monitoring and the contact details of the landowners; Di Roberston (Boffa Miskell) for the copies and scanned images of the 2001 plot forms and photographs; and Cathy Mountier (Lincoln University) for assistance in the re-measurement of several plots. All landowners willingly provided access to the plots and information about the history and management of the forest.

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(Editor's note: The above is a précis of the major points in the report. Anyone wishing to read the full report should contact Alicia Jenkins, Ashburton District Council, PO Box 94, Ashburton, e-mail aliciaj@adc.govt.nz.)

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):

Auckland Botanical Society

Picnic: Saturday 1 December Christmas Picnic at Auckland Botanic Gardens.	**Contact:** Bec Stanley (e-mail
Field trip: Friday 25 to Monday 28 January, Anniversary Weekend Camp at Lake Waikaremoana.	**Contact:** Leslie Haines

Kaipatiki Project

Bush Walk & Talk: Monday 26 November at Chatswood, Unsworth Heights or Birkdale, North Shore, Auckland (exact location advised on booking). Time: 6.00 – 8.00 p.m. Learn to identify New Zealand native trees and other plants. Cost: $15 per person.	**Booking essential:** ph: 09 482 1172 or e-mail: admin@kaipatiki.org.nz.
Community Bush Blitz: Saturday 1 December. Time: 9.15 a.m. Meet: 17 Lauderdale Road, Birkdale, North Shore, Auckland. Come and help us remove weeds from Witheford Reserve—no chemical sprays, just muscle, enthusiasm and a few laughs; tools and morning tea provided.	**More info:** www.kaipatiki.org.nz/volunteer

Waikato Botanical Society

Field trip: Saturday 1 – Sunday 2 December to Broken Hills, Tairua, Coromandel (combined with Rotorua Botanical Society). **Meet**: Saturday 8.00 a.m. at Landcare (Waikato University) or 10.00 a.m. at Broken Hills campsite.	**Leader:** Kerry Jones ph: 07 855 9700 (home) 027 747 0733 (mobile), e-mail: km8j1s@gmail.com.
Meeting: Monday 10 December 5.30 – 7.30 p.m. for end of year jollity and botanical highlights: 'Speed flora! (members are invited to share 5 slides in 5 minutes of botanical highlights from their year) and drinks and nibbles'.	**Venue:** Environment Centre 25 Ward Street, Hamilton.

Rotorua Botanical Society

Field trip: Saturday 1 – Sunday 2 December to Broken Hills, Tairua, Coromandel (combined with Waikato Botanical Society). **Meet:** to be confirmed. Grade: medium. **Accommodation:** Tents if you want to stay overnight.	**Leader:** Kerry Jones ph: 07 855 9700 (home) 027 747 0733 (mobile), e-mail: km8j1s@gmail.com.

Wanganui Museum Botanical Group

Field trip: Saturday 1 – Sunday 2 December to Raurimu, staying overnight at Possum Lodge. Please contyact for details of where to meet and what to bring. **Leader:** Doris Hamling.	**Contacts:** Robyn and Colin Ogle, ph: 06 347 8547, e-mail: robcol.ogle@xtra.co.nz.
Meeting: Tuesday 4 December at 7.30 p.m. Christmas social evening. **Venue:** Museum's Davis lecture theatre.	**Contacts:** Robyn and Colin Ogle, ph: 06 347 8547, e-mail: robcol.ogle@xtra.co.nz.

Wellington Botanical Society

Field trip: Saturday 3 November at 9.00 a.m. for a practical introduction to electronic keys to the flora in New Zealand. Every two attendees will need a computer so if you have one, please bring a laptop, or similar, that can take a USB stick (make sure Java is installed). **Meet:** Otari Information Centre.	**Organiser:** Rodney Lewington, ph: 04 970-3142. **Leader:** David Glenny.
Meeting: Monday 19 November at 7.30 p.m. for four VUW students' presentations.	**Venue:** lecture theatre MYLT101, ground floor Murphy Building, west side of Kelburn Parade. Enter building off Kelburn Parade about 20 m below pedestrian overbridge.
Field trip: Saturday 1 - Sunday 2 December to the Kapiti area (Te Rama QEII Open Space Covenant and Nikau Reserve). **Meet:** Day 1 at 9.30 a.m. in car park on south side of Te Moana Rd, near the lights at its junction with SH1, Waikanae; Day 2 at 9.30 a.m. in parking area on east side of SH1, beside reserve. **Accommodation:** house courtesy of covenant owners; pot-luck dinner; bring own breakfast & lunch.	**Co-leaders:** Chris Horne, ph: 04 475 7025 and Barbara Mitcalfe, ph: 04 475 7149.

Annual field camp: Saturday 29 December 2012 – Monday 7 January 2013 at Arthur's Pass Outdoor Education Centre. **Accommodation:** in bunk rooms at $20 per night; the centre can sleep 44 people in 7 separate rooms. Bring your own pillows and bedding; for further information see www.apoec.org.nz. Booking ESSENTIAL. A deposit of $300 per person is required with registration and the balance will be invoiced at the end of the trip.	**Contact:** contact Chris Moore, ph: 04 479 3924, mobile: 027 431 3789, e-mail: moore.c@xtra.co.nz, to register expression of interest in attending.

Nelson Botanical Society

Weekend Camp: Friday 14 - Sunday 16 December at Cobb Valley, Northwest Nelson.	**Contact:** Cathy Jones ph: 03 546 9499 **by 25 November**.

Canterbury Botanical Society

Meeting: Friday 7 December a talk by Hugh Robinson (to be confirmed). Venue: Room A5, University of Canterbury.	**Contact:** Gillian Giller, ph: 03 313 5315, e-mail: ggillerma1@actrix.gen.nz
Field trip: Saturday 15 December to Carol Jensen's covenant, Banks Peninsula.	**Contact:** Gillian Giller, ph: 03 313 5315, e-mail: ggillerma1@actrix.gen.nz.
Summer Camp: Lake Tekapo area. The first night of camp will be 4th January and we will depart on the morning 11th January (thus field activities will be on Jan 5th to 10th inclusive). We will be based at the Tekapo Military Camp near the Tekapo township. The cost will be $10/night per person.	**For bookings contact:** Gillian Giller ggillerma1@actrix.gen.nz

University of Canterbury summer course

Practical Field Botany (BIOL305): 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**: 15 January – 23 January 2013.	**More information:** contact Dr Pieter Pelser, e-mail: pieter.pelser@canterbury.ac.nz; ph: 03 364 2987 ext. 45605.

Otago Botanical Society

End-of-year dinner: Wednesday 5 December at Golden Harvest Restaurant starting at 7.00 p.m.	**Contact:** Bill Wilson, ph: 03 477 2282 if you intend to come.
Field Trip: Saturday 8 December – Sunday 9 December to the St Marys Range, North Otago. **Accommodation:** Awakino Skifield Lodge at $25.00 per person per night; participants supply own food and overnight gear. **Depart:** Dunedin at pre-arranged mutually agreeable time for drivers and passengers.	**Contact:** David Lyttle, ph: 03 454 5470.
Field camp: Wellington Botanical Society invites BSO members to join them at its annual camp at the Arthur's Pass Outdoor Education Centre, see above for details.	**Contact:** Allison Knight, ph: 03 487 8265.

Are we there yet?

10 years of the Plant Conservation Network

New Zealand Plant Conservation Network Conference

Auckland: Thurs 23 – Sunday 26 May 2013

Symposia

Back from the brink – threatened plant recovery
Includes recovery, monitoring and adaptive management of threatened plants

Defining, understanding and banking our biota
Includes research on systematics, autecology, seed banks and plant pests and diseases

Naturalising natives – friend or foe?
Includes research and perspectives on native weeds

Beyond the converted – plant conservation advocacy
Includes promotion of the native flora to a wider audience

The urban native plant oasis
Includes urban parks, road corridors, natural fragments, novel ecosystems, trees and the urban forest

What price conservation?
Includes offsets, natural capital, nature's services and the economic importance of native plants

In conjunction with Auckland Botanical Society, Landcare Research, Massey University & Department of Conservation

Auckland Botanical Society Inc.

Landcare Research
Manaaki Whenua

Massey University
Te Kunenga ki Pūrehuroa
University of New Zealand

Department of Conservation
Te Papa Atawhai

Field Trips

Mataia Farm & Atuanui Scenic Reserve (Kaipara Harbour)

Rotoroa Island (Hauraki Gulf)

The conference programme is yet to be finalised as other field trips and events are still being planned – see **www.nzpcn.org.nz** for more details.