NEW ZEALAND PLANT CONSERVATION NETWORK

TRILEPIDEA

Newsletter of the New Zealand Plant Conservation Network

No. 135

February 2015

Deadline for next issue: Monday 16 March 2015

SUBMIT AN ARTICLE TO THE NEWSLETTER

Contributions are welcome to the newsletter at any time. The closing date for articles for each issue is approximately the 15th of each month.

Articles may be edited and used in the newsletter and/or on the website news page.

The Network will publish almost any article about plants and plant conservation with a particular focus on the plant life of New Zealand and Oceania.

Please send news items or event information to events@nzpcn.org.nz

Postal address:
P.O. Box 16102,
Wellington 6242,
NEW ZEALAND

PLANT OF THE MONTH, p. 2

Scandia rosifolia.

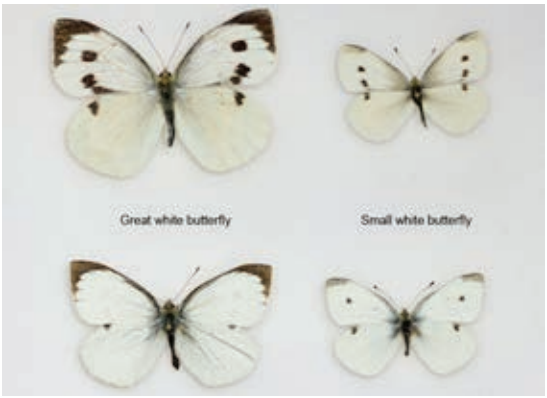
The threat reduction from great white butterfly

Jaine Cronin, Department of Conservation (jcronin@doc.govt.nz)

The great white butterfly (*Pieris brassicae*) was recorded in New Zealand in 2010 and poses a threat to species in the Brassicae family. The Department of Conservation has been responsible for managing the Great White Butterfly Eradication Programme since 2012. The department became involved in the incursion response out of concern for some of New Zealand's 79 native cress species (nearly 3% of New Zealand's indigenous flora) of which 55 are currently Threatened or At Risk (de Lange et al., 2013). A further 13 are not currently threatened but are nonetheless at risk from *P. brassicae*. Unlike its smaller relative, *P. rapae,* which lays single eggs, *P. brassicae* lays eggs in batches of 50–150. The caterpillars feed in groups on a wide range of host plants and will completely defoliate a plant, and can travel more than 100 m to find another.

Two examples of nationally critical plants that are particularly vulnerable because of their small populations and proximity to the infestation zone are coastal peppercress (*Lepidium banksii*) and chalk cress (*Pachycladon fasciarium*). Coastal peppercress (*Lepidium banksii*), related to Cook's scurvy grass (*L. oleraceum*), has fewer than 150 known individuals and is confined to several sites in Tasman Bay. Chalk cress is rarer than kakapo with only 37 known individuals. This cress is confined to the limestone bluffs of the Chalk Range, South Marlborough.

The butterfly eradication programme is a world first attempt to eradicate a butterfly and is progressing well with an encouraging decline in *P. brassicae* detections. Comparing monthly detections between years gives a good indication of the declining population. In November 2013, the team made 227 great white butterfly detections compared with only 12 in November 2014. There were similar results for December with 220 detections in December 2013 dropping to just one in December 2014. The eradication team remains positive whilst anticipating a small increase in number of detections as *P. brassicae* emerge from aestivation this autumn.



It can be difficult to tell the difference between the great and small white butterflies. Nelson-Tasman residents searching gardens for the great white butterfly should look for its caterpillars and eggs. A full description of the pest is available on the DOC website www.doc.govt.nz/great-white-butterfly

Reference

de Lange, PJ; Rolfe, JR; Champion, P; Courtney, C; Heenan, P; Barkla, J; Cameron, E; Norton, D; Hitchmough, R 2013: Conservation status of New Zealand indigenous vascular plants, 2012. New Zealand Threat Classification Series 3. 70 p.

PLANT OF THE MONTH – *SCANDIA ROSIFOLIA*

Scandia rosifolia. Photo: Jeremy Rolfe.

Plant of the month for February is *Scandia rosifolia*. This small endemic scrambling shrub is found in the North Island, from the Three Kings south to Taranaki in the west and the southern Ruahine Ranges in the east.

Found in coastal to subalpine environments, it is prostrate or scrambling; with stems up to 1 m long it can grow up to 1 m tall and becomes woody at the base. Its glossy leaves are pinnate with 2–5 pairs of leaflets with finely serrate margins, much like a rose (hence *rosifolia*). It makes an attractive garden plant with white umbel flowers produced through spring and summer. In the carrot family (Apiaceae), the flowers resemble some of its relatives such as carrot, celery and parsley.

You can see the Network fact sheet for *Scandia rosifolia* at: http://www.nzpcn.org.nz/flora_details.aspx?ID=314

More images required

We pointed out in last month's newsletter that, though we currently thousands of images, we are still missing images for a number taxa. The list below shows the species and sub-species for which we have few or no images. With all the field trips and botanising that people have been doing during the great summer weather, maybe you have an image it two that would help to plug a gap. If you have only one or two images to submit, you may forward them to info@nzpcn.org.nz but if you have more than one or two please burn them to a CD and post the CD to:

NZ Plant Conservation Network
PO Box 16-102
Wellington

Aciphylla indurata
Agrostis imbecilla
Anthosachne multiflora subsp. *multiflora*
Azorella macquariensis
Cardamine cubita
Cardamine latior
Celmisia cordatifolia var. *brockettii*
Celmisia gibbsii
Celmisia hieraciifolia var. *gracilis*
Celmisia rigida
Celmisia similis
Centrolepis minima
Chionochloa flavescens subsp. *lupeola*
Chionochloa rigida subsp. *amara*
Colobanthus squarrosus subsp. *drucei*
Aciphylla trifoliolata
Agrostis subulata
Astelia nivicola var. *moriceae*
Callitriche aucklandica
Cardamine depressa var. *depressa*
Celmisia allanii
Celmisia cordatifolia var. *similis*
Celmisia glandulosa var. *longiscapa*
Celmisia parva
Celmisia rupestris
Celmisia verbascifolia subsp. *membranacea*
Chionochloa flavescens subsp. *hirta*
Chionochloa pallens subsp. *pilosa*
Chionochloa vireta
Colobanthus squarrosus subsp. *squarrosus*

Craspedia robusta
Craspedia uniflora var. *subhispida*
Deschampsia gracillima
Dracophyllum politum
Epilobium alsinoides
Epilobium krulleanum
Festuca contracta
Festuca matthewsii subsp. *matthewsii*
Forstera purpurata
Gentianella montana subsp. *montana* var. *stolonifera*
Geranium microphyllum
Gingidia amphistoma
Gingidia flabellata
Gleichenia inclusisora
Haastia recurva var. *wallii*
Hebe divaricata
Hebe matthewsii
Hierochloe brunonis
Kelleria lyallii
Kunzea salterae
Lachnagrostis billardierei subsp. *tenuiseta*
Lachnagrostis leptostachys
Lachnagrostis striata
Lepilaena bilocularis
Leptinella intermedia
Luzula banksiana var. *orina*
Luzula decipiens
Myrmechila formicifera
Notogrammitis gunnii
Olearia laxiflora
Parahebe spectabilis
Petalochilus minor
Pimelea concinna
Pimelea nitens subsp. *nitens*
Pimelea oreophila subsp. *hetera*
Plantago udicola
Poa antipoda
Poa aucklandica subsp. *campbellensis*
Poa dipsacea
Poa maia
Poa xenica
Puccinellia macquariensis
Ranunculus mirus
Raoulia hookeri var. *laxa*
Rytidosperma viride
Schizeilema pallidum
Senecio radiolatus subsp. *antipodus*
Stellaria decipiens var. *decipiens*
Trisetum serpentinum
Zotovia acicularis
Craspedia uniflora var. *grandis*
Craspedia viscosa
Dracophyllum pearsonii
Elaeocarpus dentatus var. *obovatus*
Epilobium elegans
Epilobium matthewsii
Festuca deflexa
Festuca ultramafica
Gentianella antipoda
Gentianella serotina
Geum albiflorum
Gingidia enysii var. *peninsulare*
Gingidia trifoliolata
Glossostigma cleistanthum
Hebe angustissima
Hebe flavida
Helichrysum selago var. *acutum*
Hypericum gramineum
Koeleria riguorum
Kunzea toelkenii
Lachnagrostis glabra
Lachnagrostis pilosa subsp. *nubifera*
Libertia mooreae
Leptinella atrata subsp. *luteola*
Leptinella traillii subsp. pulchella
Luzula crenulata
Myosotis amabilis
Notogrammitis angustifolia subsp. *angustifolia*
Olearia colensoi var. *argentea*
Pachycladon crenatum
Parsonsia capsularis var. *ochracea*
Pimelea aridula subsp. *oliga*
Pimelea hirta
Pimelea oreophila subsp. *ephaistica*
Pimelea traversii subsp. *borea*
Poa acicularifolia subsp. *ophitalis*
Poa aucklandica subsp. *aucklandica*
Poa celsa
Poa intrusa
Poa ramosissima
Puccinellia antipoda
Ranunculus biternatus
Ranunculus stylosus
Rytidosperma biannulare
Schizeilema allanii
Senecio colensoi
Stellaria decipiens var. *angustata*
Thelymitra intermedia
Veronica calycina

New Zealand Indigenous Flora Seed Bank (NZIFSB) – Tetrazolium testing

Jessica Schnell (j.l.schnell@massey.ac.nz) and Craig McGill (c.r.mcgill@massey.ac.nz)

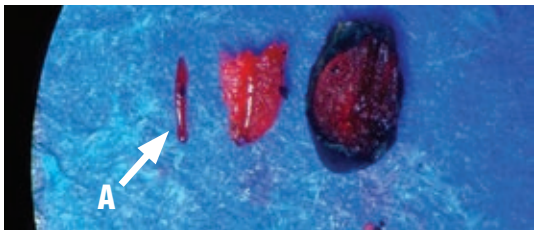


Figure 1: *Dianella nigra* (New Zealand blueberry) stained in tetrazolium solution showing it is viable. Embryo (A) has been removed.

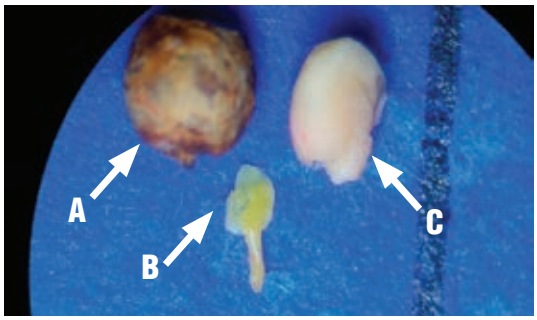


Figure 2: *Melicytus obovatus* non-viable seed (not stained when treated with tetrazolium solution). With outer seed coat (A), embryo (B) and without outer seed coat (C).

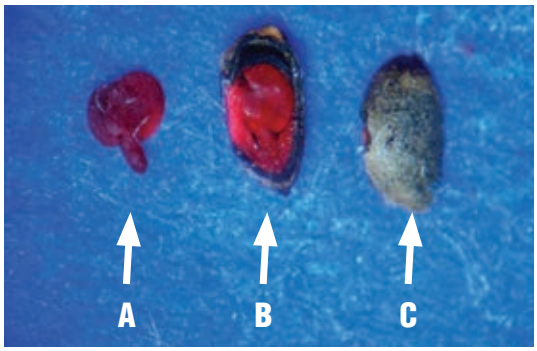


Figure 3: *Entelea arborescens* (Whau) stained in tetrazolium solution (viable seed) with the embryo (A) removed on the far left, with embryo present (B) and with outer seed coat (C).

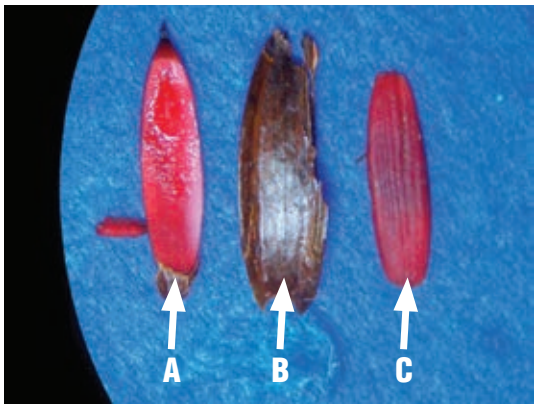


Figure 4: *Aciphylla colensoi* (giant speargrass) stained in tetrazolium solution (viable seed) with the embryo evident on the top of the seed (A), outer seed coat (B) and removed portion of seed (C).

Recently, Jessica Schnell has been working with Diane Bell at the AsureQuality Limited seed laboratory to determine the viability of un-germinated seeds using the tetrazolium test. The tetrazolium test is a biochemical test that uses a solution of triphenyl tetrazolium chloride to stain the tissue of viable seed red. This test is very useful for assessing the viability of dormant seed that would otherwise take months and in some cases years to germinate. Dormancy is a feature of the seed of many species in the New Zealand flora and, for many of these, we do not know how to alleviate the dormancy. Though the test is very valuable for telling us whether seed is viable before being accessioned into the seed bank it does require specialist knowledge to determine how to prepare the seed for staining and to interpret the staining. Again, this is particularly so for seed of the New Zealand flora where there is limited information available.

For those species where no information is available, a starting point is identifying the family and then using resources such as the Working Sheets on Tetrazolium Testing published by the International Seed Testing Association to determine the best method of staining. Working with Diane Bell, who has a particular interest in using tetrazolium to assess viability in seed of the New Zealand flora, has provided an opportunity for new learning in an area important to enable successful banking of seed of the New Zealand flora. As well as helping to determine the quality of the seed collected, the staining also adds to our understanding of the morphology of the seed. Our thanks go to Diane and AsureQuality Limited for their help and support of the New Zealand Indigenous Flora Seed Bank.

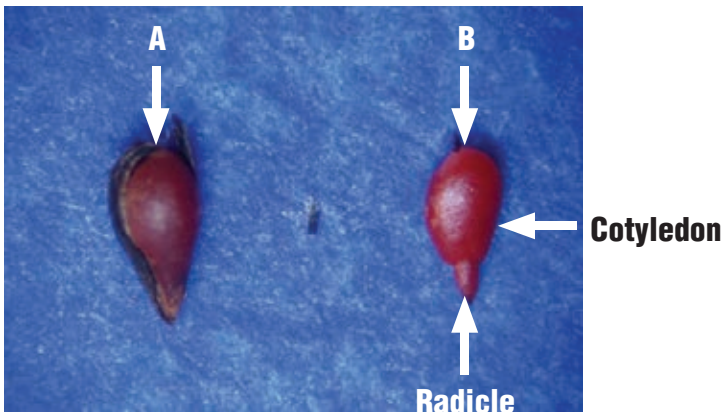


Figure 5: *Pimelea buxifolia* stained in tetrazolium solution (viable seed) with the outer seed coat (A), and the seed coat removed on the right (B).

NZPCN 2015 Conference Dunedin 28-30 October

'Nurturing Our Conservation Roots for Generations to Come'

This is the first time the Network has held a conference in Dunedin, home of the country's earliest botanical society and oldest botanic garden. Two days of symposia at Otago Museum will be proceeded by a selection of workshops that delegates are invited to attend. Saturday will be devoted to exploring the native plant communities and native gardens in and around Dunedin.

The conference will offer eight symposia themed around celebrating early plant conservation and fostering plant conservation efforts into the future. The symposia themes are:

- Early Plant Conservation in New Zealand
- Unique Southern Flora
- Native Plant Protection – legal issues and opportunities
- Threatened Plant Research
- Grassroots Plant Conservation
- The Next Generation of Plant Conservationists
- Working with Native Plants
- Building Networks and Partnerships

If you would like to present a paper during one of these symposia, please contact the conference coordinator, Jesse Bythell (jesse@biosis.co.nz), no later than **17 April 2015**.

Conference costs, workshop and field trip details are still being finalised and will be announced soon on our website (www.nzpcn.org.nz).

Requests for information

Manawatu Gorge

For several years, a group of enthusiastic people has been working on a publication about the Manawatu Gorge. This publication is due to be completed in 2016. The publication will explore various topics including the New Zealand native plants that feature in the Gorge. To those who have provided information so far, we are truly grateful.

We have nearly completed the New Zealand native plant section, however, we would like to take one final opportunity to call for information/ material from members of the Network that might contribute to the richness of this chapter. If you have any information on native plants in the Gorge to offer, no matter how significant/insignificant you think it might be, please contact Michele Frey, email: michele.frey@opus.co.nz, ph: 027 208 1090.

Senecio

Jasmine Liew, email: chia.liew@pg.canterbury.ac.nz, would like some assistance with her PhD project: localities of *Senecio glaucophyllus* in Otago. Could Network members keep an eye out for *Senecio glaucophyllus* and, if possible, please collect a specimen of the plant? If anyone spots this plant, please let Jasmine know.

New book: Vascular plants of Ahipara, Kaitaia area and Karikari Peninsula, Northland

This book by Dr Mike Wilcox is published as Auckland Botanical Society Bulletin No. 131 (2014), 253 pages; copies, which cost $25 including p&p may be obtained from

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Auckland 1344

New South Pacific cliff flower is critically endangered

Tony Cohn

What plant species has just been discovered but is almost gone? *Bidens meyeri*—a recently discovered flowering plant from the small South Pacific island of Rapa, located in the southernmost part of French Polynesia.

The newly discovered flowering plant *Bidens meyeri.*

This new species was introduced to science and the public last October in the journal PhytoKeys by National Museum of Natural History botanist Vicki Funk and her collaborator, Kenneth Wood, from the National Tropical Botanical Garden in Hawaii. *Bidens meyeri* grows exclusively on the steep, windswept volcanic cliffs of Rapa. The flower, distinguished by its soft, veiny yellow petals, is named after conservation biologist Jean-Yves Meyer of Tahiti, in part in recognition of his efforts in exploring and conserving the unique biota of Rapa.

Rapa is what botanists call an 'anomalous district,' meaning it has an unusually vast amount of biodiversity but the origin of the diversity is confusing. According to the Smithsonian's Funk, her co-discovery of *B. meyeri*, "represents the end of a long line of *Bidens* species that have island hopped their way from western North America to Hawaii to the Marquesas to the Society Islands and ended up on the cliffs of Rapa in the Austral Islands."

Conservation biologist Jean-Yves Meyer climbing a volcanic cliff with a specimen of *Bidens meyeri* in his teeth.

This plant is known from only a few specimens found on the above cliff on the South Pacific island of Rapa. The plant was named in Meyer's honour.

But *B. meyeri'*s beauty may not last long. It is regarded as critically endangered and faces a very high risk of extinction in the wild. The reason for this is unconfirmed, but scientists point to several potential factors that contribute to the flower's endangered existence: climate change, possible fires, destruction by feral goats introduced to the island by humans and competition with invasive plants. This botanical beauty is most closely related to *B. saint-johniana* from nearby Marotiri Island, although it is generally smaller.

Like many new discoveries, finding *B meyeri* was unexpected. Several scientists visited Rapa for a month to take a botanic survey of the island. Because of a logistical travelling complication (the return boat sank), many of the scientists stayed on Rapa longer than anticipated. The scientists discovered several new species during their extended time on the island, including the colorful and cliff-dwelling *B. meyeri*.

(*This item was first published in Smithsonian Science 21 January 2015*)

Dracophyllum fiordense – additional comment

As a result of the January item about *Dracophhyllum fiordense*, Sir Alan Mark sent the following comment to the author and the Network:

> *I enjoyed your article in the latest NZPCN E-Newsletter (#134) on the* Dracophyllum fiordense *you recently confronted on Breaksea Island and again on the Darran Mountains. As you say, it's a fantastic looking shrub or subcanopy small tree with its tufted crown of leaves: altogether a most handsome species. These are both relatively inaccessible sites for the average naturalist/botanist but there's a very accessible mature specimen a few metres off (and south of) one of the last zig-zags on the Key Summit track in the uppermost section of the silver beech forest. Cheers, Alan Mark.*

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

Meeting: Wednesday 4 Mar at 7.30 p.m. for the AGM followed by an update on RPMS by Imogen Bassett and Nick Waipara. **Venue:** Unitec Building 114, Room 2001.	**Contact:** Maureen Young, email: youngmaureen@xtra.co.nz
Field trip: Saturday 21 March to Woodcocks Reserve and Thomson Reserve, Kaipara Flats. **Leader:** Maureen Young.	**Contact:** Maureen Young, email: youngmaureen@xtra.co.nz

Ecofest North 14 March –12 April

Month-long festival : fun, practical events to celebrate environmental action and sustainable living on the North Shore and up to Matakana. Supported by Auckland Council and Ray White North Shore, and co-ordinated by Kaipatiki Project Environment Centre.	**Details:** www.ecofest.org.nz, facebook/ecofestnorth, facebook/sustainablewhanauchallenge, festival@kaipatiki.org.nz or ph: (09) 482 1172

Rotorua Botanical Society

Field trip: Saturday 8 March to Mt Tarawera (combined with Rotorua Forest and Bird) (Sunday 9 March reserve day) **Meet:** at the car park beside the Rotorua Police Station at 8.00 a.m. or DOC Ashpit Road campground, Lake Rerewhakaaitu, at 8.45 a.m. **Grade:** medium-hard and, in particular, confident in walking on steep mobile scoria slopes and along high, sharp ridges. **Registration:** minimum age 14 years old; a maximum of 30 people on trip on a first come basis so must register with trip leader by Monday 3 March at the latest. Please notify trip leader if you have a 4WD available for trip carpooling. **Cost:** free. **Bring:** minimum 2 litres water, lunch, and snacks, wet weather and warm gear, sun hats, sunblock, boots or sturdy shoes, gaiters and/or leggings an advantage for loose scoria, 4WD if you have one.	**Leader:** Paul Cashmore, ph: 07 3484421 (hm), 07 3497432 (wk), 0276 507 264 (cell); email: pcashmore@doc.govt.nz
Field trip: Saturday 21 March to the Okareka Mistletoe Restoration Project Weed Control Work Day. **Meet:** corner Summit and Loop Rds (lake end) at 8:45 a.m. **Grade:** medium-hard; activities suitable for all ages and abilities will be provided.	**Leader:** Paul Cashmore, ph: 07 349 7432 (wk) or 027 650 7264 (hm), email: pcashmore@doc.govt.nz.

Wanganui Museum

Meeting: Tuesday 3 March at 7.30 p.m., for a talk by Jessica Schnell and Craig McGill, Institute of Agriculture and Environment, Massey University titled 'The New Zealand Indigenous Flora Seed Bank'.	**Venue:** Davis Lecture Theatre.

Wellington Botanical Society

Field trip: Saturday 7 March to Hawkins Hill. **Meet:** 9 a.m. Brooklyn wind-turbine car park, Hawkins Hill Road, off Ashton Fitchett Drive, Panorama Heights.	**Leader:** Leon Perrie, email: leon.perrie@tepapa.govt.nz, ph: 04 381 7261 (w), 027 419 1378; **Deputy Leader:** Lara Shepherd, email: lara.shepherd@tepapa.govt.nz, ph: 04 381 7379 (w).
Meeting: Monday 17 March at 7.30 p.m. for a talk by Catherine Beard, Department of Conservation titled 'Managed honeybees in New Zealand native ecosystems – what's the buzz?'	**Venue:** Lecture Theatre M101, ground floor Murphy Building, west side of Kelburn Parade; enter building off Kelburn Parade about 20 m below pedestrian overbridge.

'Up the Garden Path' conference, Te Papa, Wellington, 2 and 3 March

Conference: amenity horticulture and premier gardens sector. This conference sets out to explore the path to the future for the NZ horticultural industry. It takes advantage of a fortunate coincidence of existing conferences including the Botanic Gardens of Australia and New Zealand (BGANZ), New Zealand Recreation Association and the Royal New Zealand Institute of Horticulture. The planned events have been brought together under the conference banner 'Up the Garden Path'.	**Information and registration:** Up the Garden Path Event Website or contact: jude@nzrecreation.org.nz.

Nelson Botanical Society

Field trip: Sunday 15 March to Otuwhero wetland, Marahau. **Meet:** at Church steps at 8.00 a.m.	**Leader:** Helen Lindsay, ph: 03 528 4020; PLEASE register with Leader by Friday, 13 March for SAR protocols and in case of cancellation.

Canterbury Botanical Society

Meeting: Monday 2 March at 7:30 p.m. for a talk by Lotta Wallin titled 'You're never going to please everyone - Conservation of meadow plants in Sweden'.	**Venue:** Upper Riccarton Library community meeting room, 71 Main South Road. Note new meeting night for 2015: Mondays!
Field trip: Saturday 7 March to the Whitecliffs restoration project. Meet: at Yaldhurst Pub at 8.45 a.m. to carpool, or outside the Glentunnel Hall at 9.30 a.m. **Note:** we will not be in beech forest but it is the wasp season so please carry antihistamines; wear boots, bring your lunch and thermos/water bottle. **Reimbursement for drivers:** $20.	**Leaders:** Alice Shanks, ph: 03 337-1256 or 027-366-1246 and Elizabeth Forrest, ph: 027-4500-365.

Otago Botanical Society

Meeting: Wednesday 11 March at 5.20 p.m. for a talk by Robin Thomas, Coastal Otago representative for QEII titled 'QEII Covenants in Otago'. *Please be prompt as we have to hold the door open.*	**Venue:** Zoology Benham Building, 346 Great King Street, behind the Zoology car park by the Captain Cook Hotel. Use the main entrance of the Benham Building to get in and go to the Benham Seminar Room, Rm. 215, 2nd floor.
Field trip: Saturday 28 March to Bungtown Conservation Area and Lake Mahinerangi. **Meet:** Botany department car park at 9.00 a.m.	**Leader:** John Barkla, ph: 03 476 3686, email: jbarkla@doc.govt.nz.

Dunedin Botanic Garden

Meeting: Friday 6 March, 12 noon . **Speaker:** Lisa Burton, Programme Leader, Otago Polytechnic and Paul Pope, Environmental Project Manager, Spiralis Ltd, titled 'Craigieburn Reserve—ove, sweat and years'.	**Venue:** Information Centre, Dunedin Botanic Garden.