BOTANICAL SOCIETY

OF OTAGO

Newsletter Number 55 November 2008

BSO Meetings and Field Trips

9 November, Sunday 9:00 am. **Field trip to Ross Creek**. Brian Heenan would like some help getting a baseline species list, and would like it even better if we would take up Brian Molloy's challenge, and adopt Ross Creek as our own 'Riccarton Bush' project. Depart Botany Carpark, at 9 am, or meet at the end of Cannington Road at 9:30 a.m. Leader Brian Heenan. Contact Allison Knight, alli_knight@hotmail.com, phone: (03) 479 7577.

19 November, Wednesday 5:20 pm. **Scented for success - investigating the role of floral fragrance in a NZ alpine plant community.** A talk by Mascha Bischoff. Floral fragrances are a vital part of the display that flowers use to attract pollinators yet they are difficult to quantify. Only recently it has become feasible to measure the scent of flowers in the field. Here I would like to present findings from a community survey of alpine flowers in the Remarkables. Those scent samples travelled around the world with me, first to South Africa for analysis and then on to the Rocky Mountains in Colorado, US, where I started a community survey of a continental alpine plant community. So I would like to share my journey and the beautiful plants I encountered along the way. See page 2 for meeting details.

19 November, Wednesday 7:30 pm. **End of year dinner**. At Nanking Palace Chinese Restaurant (198 King Edward Street, South Dunedin) after Mascha's talk. All welcome! RSVP to Robyn Bridges, robyn.bridges@otago.ac.nz, phone (03) 479 8244 by 18 November 2008.

13-14 December, Sat-Sun trip. **Weekend trip to St Marys Range**. The St Marys Range in North Otago is very interesting botanically. It is a region of transition between the greywacke mountains of Canterbury and the schist terrain that is more typical of Central Otago. Many alpines reach there southern limits here and there seems to be a considerable amount of local biodiversity within the

region. We hope to see a variety of scree plants including *Hebe epacridea*, *Leptinella atrata*, *Aciphylla dobsonii*, *Raoulia youngii*, *Stellaria roughii* and the recently described *Ranunculus acraeus*. We will be accompanied by Hugh Wood of Oamaru who has been visiting the area for many years and is very familiar with the flora. We will leave Dunedin early on Saturday 13th, drive to Kurow and then proceed to the Awakino ski field where we will stay at the ski lodge huts. There is an option of travelling up earlier on Friday 12th and staying two nights. We will be able to botanize when we arrive, and again on Sunday 14th when we will return to Dunedin. The cost of accommodation for the night will be $20.00. Individuals are responsible for organizing their own food. To finalize numbers and assist with organizing transport please get in touch with David Lyttle phone (03) 454 5470 email djlyttle@ihug.co.nz.

6 March 2009, Friday 12 noon - 2:00 pm. **Free BSO BBQ**. BBQ to welcome new botany/ecology students and new BSO members. At the front lawn, Botany House Annex, Great King Street (across the road from the main Botany building). Sausage sandwiches and drinks provided free by the Botanical Society of Otago. All BSO members welcome! Contact David Orlovich, david.orlovich@otago.ac.nz, phone (03) 479 9060.

Meeting details: Talks are usually on Wednesday evening, starting at 5.20 pm with drinks and nibbles (gold coin donation), unless otherwise advertised. Venue is the 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, Room 215, 2nd floor. Please be prompt, as we have to hold the door open. Items of botanical interest for our buy, sell and share table are always appreciated. When enough people are feeling sociable we go out to dinner afterwards - everyone is welcome to join in. Talks usually finish around 6.30 pm, keen discussion might continue till 7 pm.

Field trip details: Field trips leave from Botany car park 464 Great King Street, unless otherwise advertised. Meet there to car pool (10c/km/passenger, to be paid to the driver, please). 50% student discount now available on all trips! **Please contact the trip leader before Friday for trips with special transport, and by Wednesday for full weekend trips**. A hand lens and field guides always add to the interest. It is the responsibility of each person to stay in contact with the group and to bring sufficient food, drink and outdoor gear to cope with changeable weather conditions. Bring appropriate personal medication, including anti-histamine for allergies. Note trip guidelines on the BSO web site: http://www.botany.otago.ac.nz/bso/

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Chairman's Notes

John Barkla

The highly variable weather caused a few last minute changes and uncertainties for field trips but in the end all trips went ahead and some even got fine weather!

By all accounts Brian Molloy gave a stimulating and thoughtful Baylis Lecture that was well appreciated by a large audience. I hear there was a good turnout to the restaurant dinner that followed too.

Hopefully you all know about the Society's 2009 calendar and have, or are about to, purchase a copy or two. We've had some great feedback about the pleasing mix of landscape and plant portraits so spread the word and encourage your friends and colleagues to purchase copies as well.

There are still a few exciting trips and talks, which I encourage you to take advantage of before the year finally closes in. In particular note the weekend trip in December to the Awakino Skifield on the St Marys Range. With luck our timing will be good for seeing those extraordinary alpine scree plants in flower.

Mascha Bishoff will also be sticking with an alpine theme with her upcoming talk on the role of floral fragrance in a NZ alpine plant community. After her talk there's a chance to socialise over the "End of Year" dinner at the Nanking Palace. It would be good to see you there.

Editor's Notes

David Orlovich

Welcome to *BSO Newsletter No. 55*! Thanks very much to John Barkla for editing the last Newsletter while I was recovering from my hospital stay. **Please submit copy for next newsletter by 30 January 2009.**

Editor's guidelines: Contributions are always welcome. Authors don't need to format their submission, but try to aim for a 0.5 – 1 page of 14 pt Times for news, trip/meeting reports and book reviews, and 1 – 5 pages, including illustrations, for other articles. Electronic submission (by email to the editor: david.orlovich@otago.ac.nz) is preferred. Please send photos as separate files (not embedded in Word documents) and remember to include photo captions and credits.

Disclaimer: The views published in this newsletter reflect the views of the individual authors, and are not necessarily the views of the Botanical Society of Otago, nor do they necessarily reflect the views of the Department of Botany, University of Otago, which is supportive of, but separate from, our society. Publishing of advertisements does not necessarily imply endorsement by this Society.

Correspondence and News

BSO Audrey Eagle Botanical Illustration Competition 2008

Hearty congratulations to this year's competition winners: first prize to Helen Nutt, second prize to Emma Shaw, and third prize to Polly Mulholland. The three prize-winning drawings are reproduced in this issue of the *Newsletter*.

Botanical Illustration Competition 2008 winner Helen Nutt: Quince. *Cydonia oblonga* has been studied through the four seasons in my sheltered garden on the Port Hills of Christchurch. From winter dormancy - to leaf bud - to blossom petal fall - to the ripening fruit. The fruit and plant detail have been accurately measured and drawn true to size. I have endeavoured to capture the wonderful translucent yellow of the quince and illustrated the growth from blossom to mature fruit. As a botanical artist the completed work is scientifically accurate in detail, form, growth habits and true to species.

Rare plants wanted for Orokonui!

The Orokonui Ecosanctuary is establishing an area to highlight Otago's rare plant species. We are trying to source the following plants, some are required in large numbers so every plant is helpful. It is also important that the provenance of the plant is known. Several members have

already made donations of plants or seed, for which the Sanctuary is most appreciative.

PLANTS WE ARE LOOKING FOR
Acaena microphylla var *pauciglochidiata*
Carex inopinata
Carex raoulii
Carmichaelia kirkii
Celmisia hookeri
Coprosma intertexta
Gingidia grisea
Melicytus flexuosus
Olearia hectorii
Olearia lineata
Pseudopanax ferox
Simplicia laxa
Uncinia strictissima

If anyone can help please contact Valerie Fay by phoning (03) 482 2806 or email mikeandvalfay@paradise.net.nz

Botanical Society of Otago 2009 Calendar available while stocks last!

The 2009 BSO Calendar is available for purchase. This beautiful calendar has photographs from the 2008 BSO Photography Competition. These are essential Christmas presents for the discerning botanist and friends!

Calenders available from Lyn Bentley: stevelf@ihug.co.nz; (03) 453 6542; or c/- Botanical Society of Otago, PO Box 6214, Dunedin 9059; for $15.00 plus $1.50 (Standard) or $2.00 (FastPost) postage if required, per calendar, or multiples of two. Cheques payable to the Botanical Society of Otago. Save postage and purchase them in person from Trish Fleming, Dept of Botany, University of Otago, 464 Great King Street, North Dunedin, or at one of our talks.

Olympic Medal for Lifetime Contribution in Lichenology! *Bill Lee*

David Galloway was recently honored by the International Association for Lichenology (IAL) at their July 2008 conference in California with the award of the Acharius Medal for outstanding research in the field of lichenology. Named after Erik Acharius (1757–1819), a Swedish botanist who pioneered the taxonomy of lichens, the Acharius Medal is given to distinguished researchers for their life-time contribution to the field of lichenology. While we are well aware of David's biosystematic contributions to understanding lichens in New Zealand, his work internationally, as past-President of the IAL, and numerous publications on the historical and taxonomic aspects of lichens around the world, are perhaps less widely appreciated here. Acknowledging his stature, Bibliotheca Lichenologica published a Festschrift in 2007 (Lichenological Contributions in Honour of David Galloway) in which many colleagues and friends contributed papers on the diverse aspects of lichenology. Congratulations David, and thanks for sharing your insights, enthusiasm, and extensive knowledge of lichens with us.

Dr David Galloway, proudly holding the Acharius Medal and a picture of Acharius. Photo by David Orlovich.

Giant Sequoia information wanted

Wyn Jones (wyn.jones@stonebow.otago.ac.nz) writes: I would like any information on the history of the very old *Sequoiadendron giganteum* (Wellingtonia, Giant Sequoia) on Campus, growing outside Unicol and St Margaret's. The two on North Ground may be the same age? I would like to know when they were planted, by whom and where the plants came from?

Urban Restoration

The University of Waikato's Urban Restoration team is conducting FRST funded research comparing levels of genetic variation in out-planted, eco-sourced plants to levels of genetic variation within natural populations across the Waikato Basin. The results of this work will inform, from a genetic perspective, on the success of current eco-sourcing practices and provide some estimates of genetic variation over geographic distance (how local is local?). This information then would be used in conjunction with logistical considerations on how best to collect wild seeds for the purpose of restoration/rehabilitation, as well as conservation, programs.

As part of our research, we are conducting an electronic survey seeking to understand what people in the wider community think and know about eco-sourcing. The survey is aimed at those people who collect seeds (e.g., nurseries), those who use native plants in restoration (e.g., community groups) and for those who provide advice on native plantings (e.g., consultants).

We would like your help, and ask that if you would like to complete this survey please contact Chrissen Gemmill, details below. All answers will be kept confidential and neither you nor your answers will be personally identified.

We appreciate your help with the research very much. We will send out the results of the survey to all of you that participate. Please don't hesitate to contact me directly should you have any questions. And please feel free to pass this on to others that might be interested.

Dr. Chrissen Gemmill and the Urban Eco-sourcing Team
Centre of Biodiversity and Ecology Research (CBER)
Department of Biological Sciences
Te Whare Wānanga o Waikato
University of Waikato
Private Bag 3105,
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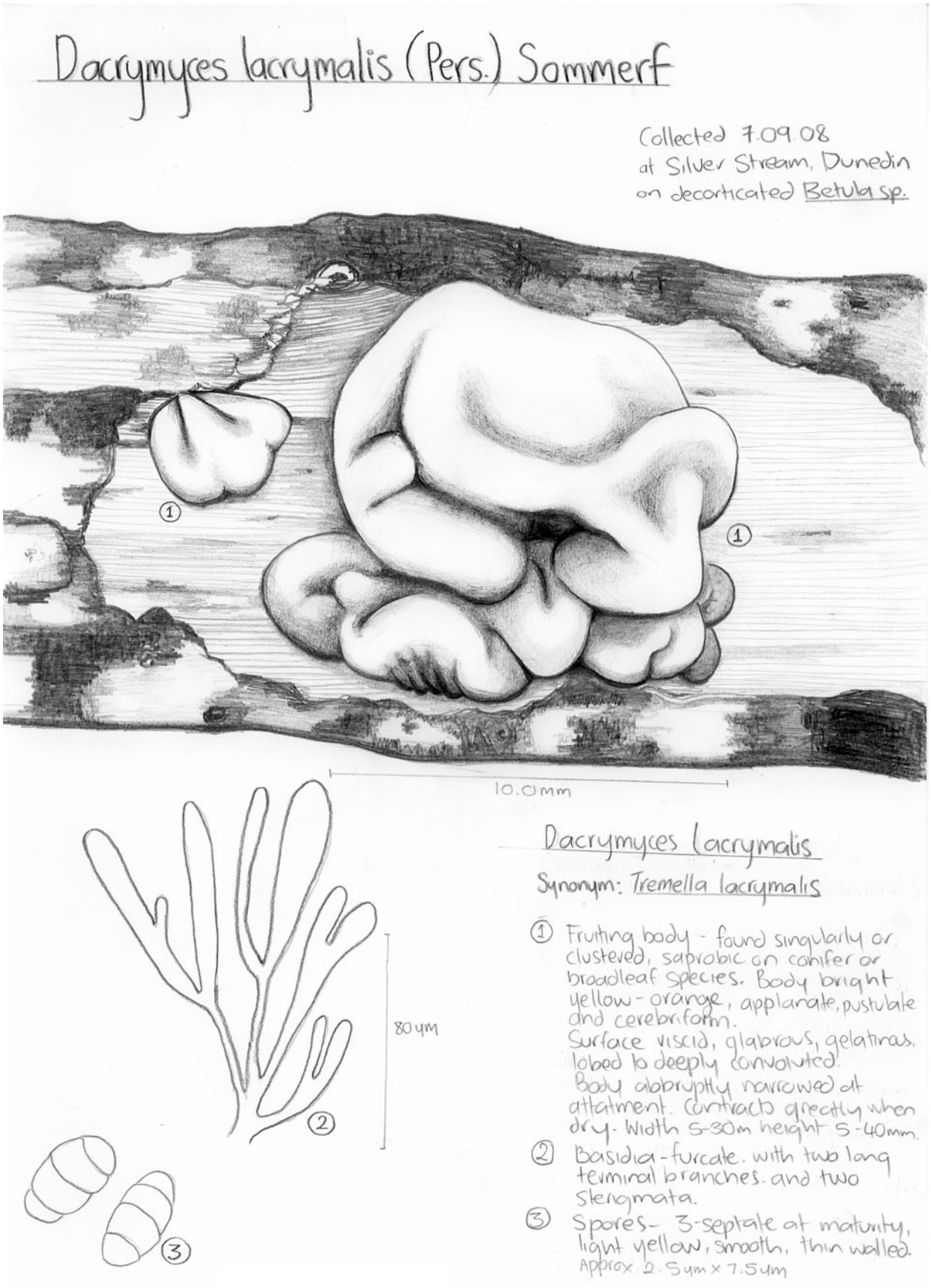
Key to the plants of the track from Pigeon Flat to Leith Saddle *John Steel*

Over the past few years I have been compiling a key to the vascular plants that can be seen from the track leading from Pigeon Flat to the summit of Swampy Spur. I have been inflicting this key on students on their trips to the area and acknowledge their help in refining it. I have used only vegetative characters and have incorporated solutions to those problems students have encountered when using it. The key is now available for download from the BSO website (see the Downloads section of the web site). If anyone cares to try it out when visiting the area, I would appreciate any further feedback as well as any new species they come across. Some work still needs to be done on the *Coprosma* species and the grasses and any comments there would be welcomed.

http://www.botany.otago.ac.nz/bso/downloads.php

BSO Drawing Competition 2008 Third Prize: Polly Mulholland. I drew the kowhai on the 27th of August last year, and it was flowering on the hillside above our cottage in Burkes. I guess what drew my eye to it was the way the flowers were so pronouncedly curved into the shrub centre and away from the browsing beaks of pigeons (who seemed to be onto the ruse anyway). For most of my botanicals I use a combination of watercolour washes and coloured pencils for the detail.



BSO Drawing Competition 2008 Second Prize winner Emma Shaw's drawing of *Dacrymyces lacrymalis*

Articles

Where in New Zealand is the highest diversity of threatened plants?

Mike Thorsen

If you automatically thought the Surville Cliffs or North West Nelson you may be wrong. During the past three years I have collected records from botanical explorations of threatened or uncommon plants present at a site known locally as Macraes. This list is now extensive and contains 84 species with 6 Acutely Threatened, 9 Chronically Threatened, 21 At Risk, 15 Regionally Significant and 32 Locally Notable taxa present. This is an exceptional diversity of threatened plants within a 3000 ha area, and I believe this is the highest diversity of threatened and uncommon plants of any area in New Zealand for its size – if you exclude sites that are very small fragments of formerly widespread habitats (such as Pisa Flats which has 14 Threatened or At Risk species in 25 ha).

Macraes is situated 45 km north of Dunedin, 25 km inland from the coast and ranges in altitude from 400 m to 714 m a.s.l. The area under investigation consists of hybrid *Chionochloa* tussockland and short tussock grassland induced by Maori and pastoralist clearance of the original semi-arid podocarp forest and small-leaved shrubland on ridge crests and the mesic broadleaf forest from hillslopes and drainages. Only remnants of these vegetation communities remain. 26 species, thought to be shade-dependant shrubland- or forest-floor inhabitants, are now restricted at Macraes (as they are elsewhere in Central Otago) to underneath rock overhangs, which are possibly acting as a forest/shrubland surrogates. The area is a mix of DOC Scenic Reserves and Conservation Covenants and private land. Plant species diversity at Macraes is also very high, with 350 native species and 84 exotic species recorded from the site.

This diversity at Macraes is probably a result of the geographic placement and altitude of Macraes with representation from dryland Central Otago species, mesic eastern Otago lowland species, montane species, and a topography with a diversity of landforms including shallowly-impounded ephemerally wet areas on broad peneplain ridge tops and deeply-incised drainages with a plethora of rock outcropping. Another reason for the high diversity is the number of botanists that have spent time in the area. Graeme Loh, Peter Johnson, Kate Wardle, James Bibby, Graeme Jane, John Barkla, Peter de Lange, and myself have all spent time at this site and contributed species records. However, new records of native species are still being made - at a rate just under one species a day.

Many of these threatened species have significant populations at the site, and Macraes is a national stronghold for several species. However some of the species have declined dramatically. For some species the reasons for this decline are unknown, but for others

(particularly inhabitants of ephemeral wetlands) it is thought that regrowth of taller (usually exotic) vegetation has swamped the smaller native species. This regrowth has occurred as a consequence of excluding stock from reserve areas by fencing. And then again fencing has benefited some shrub and tree species - an indication that techniques used for reserve management have to be carefully considered.

There are two species at Macraes that appear to be undescribed local endemics known only from Macraes. These are a small *Thelymitra* orchid and an *Uncinia* hookgrass.

The wetland-transforming exotic rush *Juncus subnodulosus* and grass *Narduus stricta* have very restricted distributions at Macraes and emphasis must be given to their eradication here. Several woody weed species are present than could transform some vegetation communities. These species are gorse *Ulex europaeus*, broom *Cytisus scoparium*, pine *Pinus radiata*, gooseberry *Ribes uva-crispa*, and elder *Sambucus nigra*. Mouse-ear hawkweed *Hieracium pilosella* is ubiquitous, forming a distinct vegetation community that contains surprising amounts of native species diversity. Tussock hawkweed *Hieracium praealtum* is present in several locations, but does not currently seem to be negatively impacting native plant communities.

Though the claim of New Zealand's highest diversity of threatened plants at Macraes is deliberately provocative, diversity of threatened plants is one of the criteria adopted by the NZPCN for judging whether an area qualifies as an Important Plant Area (IPA). I would therefore like to formally propose Macraes as New Zealand's third IPA. This is also a challenge to those that think they have a site that is as good as (or even better?) than Macraes to nominate it to the NZPCN as an IPA.

And before I forget, there are also two critically endangered skink species (grand and Otago skinks), a wealth of archaeological sites including Maori rock shelters, tool making sites, and moa kill sites, remnants of early European gold mining and pastoralism (including a sod wall that stretches for 10's of kilometres). All in all an amazing place.

A thank you to John Barkla for humorously pointing out the flaws in this article.

List of threatened and uncommon plants recorded from Macraes. Threat classifications follow de Lange et al. (2004) except for the categories Regionally Significant to denote species that are rare in the Otago region, but not considered threatened nationally, and Locally Notable to denote species that are rare or unusual for the Ecological District or Macraes environ.

de Lange, P.J; Norton, D.A; Heenan, P.B; Courtney, S.P; Molloy, B.P.J; Ogle, C.C; Rance, B.D. 2004. Threatened and uncommon plants of New Zealand. *New Zealand Journal of Botany* **42**: 45-76.

Nationally Endangered

Cardamine (b) (CHR 312947; "Tarn")	Recorded by G. Loh from several ephemeral wetlands. Extinct at all of these. Discovered at one new site with c. 10 plants. In cultivation
Crassula peduncularis	In scattered ephemeral wetlands throughout
Myosotis pygmaea var. *glauca*	Currently only known from c. 5 plants near Bog Pine. Was recorded by G. Loh from several sites but extinct at these now.
Myosurus minimus subsp. *novae-zelandiae*	Currently only known from c. 5 ephemeral wetland sites at Macraes. Was previously more common
Chaerophyllum colensoi var. *delicatulum* (ex. *Oreomyrrhis colensoi* var. *delicatula*)	Seasonally inundated backwash gravels beside lower Deighton Creek at one site
Simplicia laxa	Known from 24 sites at Macraes. National stronghold for this grass

Nationally Serious Decline

Olearia fimbriata	One tree in lower Deighton Creek
Tetrachondra hamiltonii	Known from 9 ephemeral wetlands. Status in some of these unknown
Isolepis basilaris	Known from 44 ephemeral wetlands. Declining in some, still abundant in others

Nationally Gradual Decline

Carmichaelia crassicaulis subsp. *crassicaulis*	Scattered individuals in south of area totalling c. 200 individuals. Regenerating in the absence of stock
Epilobium chionanthum	Scattered in marshy streams. Difficult to distinguish from *E. macropus*
Gratiola concinna (ex. *Gratiola nana*)	Known from 49 ephemeral wetlands. Declining in abundance in many of these
Leptinella serrulata	Known from 1 patch at Mandy's Rock. Difficult to distinguish from *L. pusilla* which is scattered in area
Deschampsia cespitosa	Trig J wetlands. Scattered plants
Iphigenia novae-zelandiae	Scattered populations throughout in heathland and *Hieracium* herbfield (small plants to 2 cm high) and rare in ephemeral wetlands (larger plants to 10 cm tall)

Nationally Sparse

Coprosma intertexta	Known from a small grove in Deighton Creek
Olearia lineata	Previously recorded (Bibby 1997) from Lot's Wife
Aciphylla subflabellata	Scattered plants along stream banks and on Redbank Ridge
Anemone tenuicaulis	Widely distributed in damper gullies throughout
Celmisia hookeri	Rock faces on Redbank Ridge. One site on Trig J Ridge is southern limit for the species.
Kirkianella novae-zelandiae f. *novae-zelandiae*	Known only from 2 sites in Nenthorn. This is the "normal" form of Central Otago
Myosotis aff. *australis* (AK 231051; "small white")?	Provisionally identified as this taxon. Known at Macraes from several sites in the Emerald and Deighton Streams, usually in shade at the base of bluffs

Senecio dunedinensis	Small group in overhang at Nenthorn
Carex berggrenii	Previously Recorded (Wardle 1998) from Paddy's Rock ephemeral wetland
Carex tenuiculmis	Reasonably common along stream margins throughout and wetlands on Trig J Ridge
Uncinia elegans	Overhang in Emerald Stream
Hymenochilus tanypodus (ex. *Pterostylis tanypoda*)	Scattered colonies throughout *Hieracium* herbfield
Hymenochilus tristis (ex. *Pterostylis tristis*)	Rarer than the *H. tanypodus*. Scattered plants
Botrychium australe	A few depauperate plants at Falcon and Old Otagense Peninsula
Raoulia beauverdii s.s.	Only known from one site above Old Otagense Peninsula

Nationally Data Deficient

Crassula mataikona	Known from only two sites: Bog Pine and above Old Otagense Peninsula
Lagenifera montana	Known from 1 site in Wildlife Exclosure. This is one of few sites currently known for this species in NZ.
Vittadinia australis agg.	1 plant on bluff in Nenthorn
Rytidosperma tenue?	One site. Unconfirmed record
Carex allanii	Known from several sites in Emerald Stream. One of only three localities known nationally for this enigmatic species
Carex raoulii	Overhang at base of bluff in Emerald Stream

Regionally Significant

Halocarpus bidwillii	Known from one area only.
Phyllocladus alpinus	Previously recorded (Bibby 1997) from Lot's Wife.
Coprosma rubra	Previously recorded (Bibby 1997) from Redbank Ridge.
Hypericum aff. *japonicum* agg. (tarn)?	Known from a few ephemeral wetlands.
Kirkianella aff. *novae-zelandiae*	A glaucous plant of rock bluffs. Known from 3 sites along Emerald Stream (including 2 in Wildlife Exclosure). This taxon is currently only known from 3 localities in NZ (P. de Lange pers. comm.)
Myosotis aff. *australis* (Tor; Middlemarch) (*M.* "Lammerlaw")	Known from 5 sites, 4 in the Wildlife Exclosure, 1 in Emerald Stream. An undescribed species known from rock tors at Macraes, Sutton, and on the Lammerlaw and Rock & Pillar Range. Rare and declining throughout its range
Myosotis sp. undetermined (cf. *M. forsteri*)	An apparently distinct taxon known only from deeply shaded overhangs at Macraes (6 sites) and near Sutton
Pelargonium inodorum	Known from 2 plants on tor above Emerald Stream. Rare in Otago (elsewhere only known from Stephensons Is.)
Plantago spathulata subsp. *spathulata*	Previously recorded (Bibby 1997) from Redbank.
Deyeuxia quadrasita	Known from 1 site.

Stenostachys gracilis	Known from 2 bluffs in Wildlife Exclosure.
Carex c.f. *dallii* "Otago"	Differs most obviously from *C. dallii* s.s. (a West Coast plant) in the wider spacing between spikelets. Known from scattered localities along stream margins at Macraes.
Uncinia egmontiana	Unconfirmed. Scattered plants in Emerald Stream in damp sites
Thelymitra aff. *longifolia* taxon indet.	An orchid known only from Falcon and Wildlife areas at Macraes. Similar to a diminutive *T. longifolia* but single flower with an urceolate column

Locally Notable

Podocarpus hallii	Mainly scattered individuals. A grove exists amongst tors on the eastern end of Redbank Ridge. Rare in the E.D.
Podocarpus nivalis	Previously recorded (Bibby 1997) from Redbank Ridge. Rare in the E.D.
Aristotelia fruticosa	Previously recorded (Bibby 1997) from Redbank Gully. Rare in the E.D.
Coprosma cheesemanii	Previously recorded (Bibby 1997) from Redbank Ridge and Emerald Stream. Rare in the E.D.
Coprosma cuneata	Previously recorded (Bibby 1997) from Lot's Wife. Rare in the E.D.
Coprosma pseudocuneata	Previously recorded (Bibby 1997) from Lot's Wife. Rare in the E.D.
Fuchsia excorticata	1 plant in Wildlife Exclosure.
Fuchsia perscandens	Previously recorded (Bibby 1997) from Lot's Wife. Rare in the E.D.
Helichrysum lanceolatum (ex. *H. aggregatum*, *H. glomeratum*)	Known from 2 plants in the Emerald Stream
Kunzea ericoides s.l.	Known mainly from the Emerald Stream. Scattered plants elsewhere. Rare in the E.D.
Melicope simplex	Known from Trig J and Redbank Ridges. Rare in the E.D.
Myrsine divaricata	Known from Trig J and Redbank Ridges. Rare in the E.D.
Olearia odorata	A few plants at Nenthorn above lower Deighton Creek
Pseudopanax colensoi var. *ternatus*	Previously recorded (Bibby 1997) from Lot's Wife. Rare in the E.D.
Scandia geniculata	In shrubland beside lower Deighton Creek. Rare in area.
Sophora microphylla	2 adults and 1 seedling in Nenthorn. Rare in Central Otago
Aciphylla glaucescens	Around 6 plants at one site in Emerald Stream
Aciphylla scott-thomsonii	1 plant in Emerald Stream. Rare in area
Crassula sinclairii	Known from few ephemeral wetlands
Elatine gratioloides	Previously recorded (Bibby 1997) from an ephemeral wetland at Nenthorn. Possibly now extinct. Uncommon in Otago
Epilobium glabellum s.s.	Previously recorded (Bibby 1997) from Waikouiti Stream. A dubious record
Forstera tenella	Previously recorded (Bibby 1997) from Lots Wife. Rare in E.D.

Galium sp. aff. *perpusillum*	An inhabitant of ephemeral wetlands
Galium trilobum	Known from one overhang. Probably more widespread in area
Mazus radicans	Previously recorded (Bibby 1997) from Lots Wife. Rare in E.D.
Myosotis "pygmaea" agg. (form intermediate between "drucei" s.s. and "pygmaea" s.s., Lvs green with brown base, nonwaxy, hairs c.1mm, Central Otago mid-altitude)	Part of a poorly resolved species complex. Known at Macraes from 5 sites in the lower Emerald Stream.
Senecio glaucophyllus subsp. *discoideus*	2 plants on bluff in Wildlife Exclosure. Rare in Otago.
Agrostis muscosa	Scattered plants in Wildlife area. Rare in E.D.
Agrostis pallescens	Previously recorded (Bibby 1997) from Bog Pine wetland. Rare in E.D.
Chionochloa conspicua subsp. *conspicua*	Previously recorded (Bruce 1988). Rare in area
Oreobolus impar	Noted near Bog Pine site, and at Turf Depression 3 by Wardle (1998), Paddys Rock (Wardle 1998)
Rumex flexuosus	Gully wetlands in Nenthorn Area. Rare in Otago
Schizeilema haastii var. *cyanopetalum*	Known from a few overhangs in Emerald Stream. Southern limit for this taxon?
Griselinia littoralis	Spreading amongst tors on Redbank Ridge
Leptecophylla juniperina s.l. (ex. *Cyathodes juniperina*)	Known only from outcrops on Trig J Ridge
Raoulia parkii	Only known from one site on the Nenthorn sod wall
Uncinia cf. *rubra*	An apparently unique taxon restricted to the Macraes region. Distinguished by the greenish-red colouration, taller size, and rhizomatous habit

Trig J, Macraes, Photo by Mike Thorsen

A new record for *Triglochin palustris* in the Shotover Valley

Neill Simpson

Otago appears to be the stronghold for the marsh arrow grass, *Triglochin palutris* L. (Juncaginaceae). Good populations of this rare grass-like herb have been recorded at Moke Lake, near Queenstown and at Cairnmuir, above Clyde (Simpson 1995). In 2004 small populations were discovered in the Lindis Valley and Rees Valley (J. Barkla pers. comm.). It has also been recorded from three sites in Canterbury, near Lakes Clearwater, Coleridge and Tekapo (Wilson & Given 1989) but may have disappeared from some or all of these sites. During a threatened plant survey of some Canterbury valleys in 2004 only one plant of *Triglochin palustris* was found, near Lake Tekapo (Simpson 2004). Earlier this year Joy Comrie found it at a new Canterbury site, on the edge of the Birchwood wetland in the Ahuriri Valley.

A good population was found in February 2008 near the stock bridge that crosses the Shotover River near the Sixteen Mile Creek on The Branches Station. While on a survey with Brian Molloy, I was attracted to small mound of the bright orange fruit of *Nertera balfouriana* growing in an extensive wetland. A formidable barbed wire fence protected this part of the wetland. Barbara, my wife persuaded me to find a way over the fence to photograph the *Nertera* fruit. With some difficulty I arrived and was amazed to find numerous stalks of *Triglochin palustris* with its distinctive arrowhead-like open capsules, growing on and around the mound. I was so excited that I forgot to look at the extent of the population and this had to be left to a second visit in April with Geoff Rogers. Incidentally Kay Eden, daughter of Lorraine and Arthur Borrell, the Branches owners for more than thirty years, can remember picking the arrowheads while playing in this area as a child. The yards that contained the sheep during mustering were nearby.

Triglochin palustre closeup Shotover. Photo by John Barkla

In the Threatened and uncommon plants of New Zealand (de Lange et al.2004) *Triglochin palustris* is listed as Acutely Threatened – Nationally Endangered.

At the Shotover site *Triglochin palustris* is abundant and found all along the edge of a winding wetland that flows along the foot of a higher river terrace not far from the Shotover River. It grows in the damp turf as well as in the water along the edge of the wetland. Associated plants include *Juncus acuminatus, Juncus articulatus, Eleocharis acuta, Carex berggrenii, Hydrocotyle hydrophila, Euchiton polylepis, Potamogeton cheesemanii* and *Leptinella squalida*. An adjacent cushion bog contained *Oreobolus pectinatus, Euchiton lateralis, Gaultheria parvula, Gonocarpus micranthus, Ranunculus foliosus*, *Ranunculus* sp., *Chaerophyllum (=Oreomyrrhis) colensoi var. delicatula?* and *Hydrocotyle novae-zelandiae* var. *montana*.

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The wetland with the stock bridge upper centre above the Shotover River. Photo by Neill Simpson

Meeting and trip reports

Bull Creek, 23 August 2008

Bradley Curnow

A brilliant winters day greeted those assembled at the Botany car park for the car journey south. After some impromptu off road mud driving we set off up the track to Bull Creek. We encounter some awesome *Podocarpus totara* clinging to the bank above the creek and a dicotyledonous herb *Linum monogynum*. Also in this area were *Fuchsia excorticata* with John explaining how the world's largest *Fuchsia* has blue pollen, an unusual occurrence in the flora world. The trees that many of us came to admire were the southern rata (*Metrosideros umbellata*), which must look superb when the red flowers are in bloom.

After a few minutes admiring the ratas we started off along a track up the creek to the 'waterfall'. It felt more like the damp West Coast forest, then a usually dry East coast, due to the recent rains. We saw some cool Horopito (*Pseudowintera colorata*) flowers, which were very photogenic. Juvenile Matai (*Prumnopitys taxifolia*) and Miro (*Prumnopitys ferruginea*) were also spotted along with a large adult wood pigeon that seemed not to mind the tourists. The Bull Creek 'waterfall' was reached after a slow hour of walking and plant grazing.

Back along the coast lunch was had overlooking the beautiful blue Pacific, waves crashing into rocks with the bull kelp dancing in the waves. *Hebe elliptica* was present along the coast as was *Acaena juvenca* and *A. novae-zelandiae*. The botanical find of the day was a tiny forget-me-not *Myosotis pygmaea* var. *pygmaea*, which calls the top of the rocks home.

About mid-afternoon we headed back to the big city, which seemed to be such a shame after so nice a day. Thanks to John Barkla for leading the trip from George and Otto Hyink, Bradley Curnow, May Gallagher, Kate Bernard and Marilyn Barkla.

Bull Creek. Photo by May Gallagher.

Species List – Bull Creek Reserve

John Steel

A Department of Conservation Scenic Reserve *c*. 75 km, 1 hr 15 min, south of Dunedin on the coast.

Map NSMS 260 H45 Milton 883 440, 170° 07´E 46° 11´S Altitude 20 m

[e] = exotic
[o] = recorded by Otago Botanical Society field trip.2008.
[m]= recorded MMM field trip 17.x.2008

Fungi

Lichens

Liverworts

m *Marchantia berteroana*
m *Monocloea forsteri*

Mosses

m *Cyathophorum bulbosum*
m *Echinodium hispidum*

Ferns and lycopods

m *Asplenium appendiculatum*
m *Asplenium flaccidum*
m *Asplenium gracillimum*
m *Asplenium hookerianum*
m *Asplenium lyallii*
m *Blechnum chambersii*
m *Blechnum colensoi*
m *Blechnum discolor*
m *Blechnum fluviatile*
m *Blechnum montanum*
m *Blechnum procerum*
m *Cyathea dealbata*
m *Cyathea smithii*
m *Dicksonia squarrosa*
m *Grammitis billardierei*
m *Histiopteris incisa*
m *Huperzia varia*
m *Hymenophyllum demissum*
m *Hymenophyllum rarum*
m *Hymenophyllum revolutum*
m *Leptopteris hymenophylloides*
m *Microsorum pustulatum*
m *Pellaea rotundifolia*
m *Polystichum neozelandicum* subsp. *zerophyllum*
m *Polystichum vestitum*
m *Pteridium esculentum*

Gymnosperms

om *Podocarpus totara*
om *Prumnopitys ferrugineus*
om *Prumnopitys taxifolius*

Angiosperms

Dicotyledons

om *Acaena juvenca*
om *Acaena novaezelandiae*
m *Aristotelia serrata*
m *Bellis perennis* [e]
m *Cardamine debilis*
m *Carpodetus serratus*
m *Cerastium glomeratum* [e]
m *Cirsium arvense* [e]
m *Cirsium vulgare* [e]
m *Clematis paniculata*
m *Coprosma areolata*
m *Coprosma crassifolia*
m *Coprosma lucida*
m *Coprosma propinqua*
m *Coprosma rhamnoides*
m *Coprosma rotundifolia*
m *Crepis capillaris* [e]
m *Cytisus scoparius* [e]
m *Digitalis purpurea*
m *Disphyma australe*
om *Fuchsia excorticata*
m *Fumaria muralis* [e]
m *Galium aparine* [e]
m *Griselinia littoralis*
m *Hydrocotyle heteromeria*
m *Hypericum androsaemum* [e]
m *Hypochaeris radicata* [e]
m *Ileostylus micranthus*
m *Lamium purpureum* [e]
o *Linum monogynum*
m *Lupinus arboreus* [e]
m *Malus xdomestica* [e]
m *Melicope simplex*
m *Melicytus alpinus*
m *Melicytus ramiflorus*
m *Metrosideros diffusa*
om *Metrosideros umbellata*
m *Mimulus moschatus*
m *Muehlenbeckia australis*
m *Mycelis muralis* [e]
om *Myosotis pygmaea* var. *pygmaea*
m *Myrsine australe*
m *Nemesia floribunda* [e]
m *Olearia avicenniaefolia*
m *Parsonisia heterophylla*
m *Pittosporum eugenioides*
m *Pittosporum ralphii*

m	*Pittosporum tenuifolium*
m	*Plantago lanceolata* [e]
m	*Plantago major* [e]
m	*Plantago raoulii*
m	*Prunella vulgaris* [e]
m	*Pseudopanax colensoi*
m	*Pseudopanax crassifolius*
om	*Pseudowintera colorata*
m	*Ranunculus repens* [e]
m	*Rumex obtusifolius* [e]
m	*Sambucus nigra* [e]
m	*Senecio biserratus*
m	*Senecio jacobaea* [e]
m	*Senecio minimus*
m	*Solanum dulcamara* [e]
m	*Solanum laciniatum*
m	*Sonchus oleraceus* [e]
m	*Sophora microphylla*
m	*Stellaria media* [e]
m	*Stellaria parviflora*
m	*Streblus heterophyllus*
m	*Taraxacum officinale* [e]
m	*Trifolium dubium* [e]
m	*Trifolium repens* [e]
m	*Urtica urens*
om	*Veronica elliptica*
m	*Veronica salicifolia*
m	*Weinmannia racemosa*

Monocotyledons

m	*Agrostis capillaris* [e]
m	*Anthoxanthum odoratum* [e]
m	*Arthropodium candidum*
m	*Astelia nervosa*
m	*Carex coriacea*
m	*Cordyline australis*
m	*Dactylis glomerata* [e]
m	*Earina autumnalis*
m	*Earina mucronata*
m	*Holcus lanatus* [e]
m	*Isolepis nodosa*
m	*Juncus* sp.
m	*Libertia ixioides*
m	*Microlaena avenea*
m	*Narcissus* x *medioluteus* [e]
m	*Nematoceras orbiculata*
m	*Poa cita*
m	*Phormium tenax*
m	*Phormium tenax* cvars.
m	*Ripogonum scandens*
m	*Thelymitra* sp.
m	*Uncinia* sp. 1
m	*Uncinia* sp. 2
m	*Uncinia* sp. 3

A wood pigeon on the Bull Creek trip. Photo by May Gallagher.

Field Trip to Flax collection at Dunedin Botanic Gardens *Helen Clarke*

A first time for a Botanical Society Field trip possibly. A powhiri from Rua McCallum welcomed a small group, led by Janice Lord, on to the area where the 50 named cultivars from the Rene Orchison Harakeke/*Phormium tenax* and Whaririki /*Phormium cookianum* collection are growing in the gardens.

Following the powhiri, Rua and Debra Carr from Clothing and textile sciences at University of Otago gave us a brief history of the collection. Rene Orchison of Gisborne started a collection of harakeke/flax in the 1950s after recognizing that many of the selected cultivars used by Maori craftspeople throughout the North Island were being lost.

Rene spent over 30 years collecting, and recording information on names and uses of special harakeke cultivars from the different regions in the North Island. In 1987 she offered her collection to the Department of Scientific and Industrial Research. In 1992 Manaaki Whenua- Landcare Research took over stewardship of the collection. The collection is now growing at Manaaki Whenua at Lincoln as part of the National New Zealand Flax Collection. The National Collection is a resource base for weavers and researchers, root divisions from cultivars from the collection are available for Marae, conservation land and research and educational institutions and cultivars continue to be added to the collection.

A partial replicate of the Rene Orchison collection is planted near the Otago Polytechnic Centre at the Botanic Gardens. Unfortunately the plants in the collection have a tenuous future at this site with the proposed realignment of Lovelock Avenue expected to pass through it. It is not known at this stage where the plants will be moved to if the realignment is approved.

It appears that the plants in the present site are not growing as vigorously as the same cultivars at other sites, perhaps the cold site is not to their liking. All the plants in the present collection are from the North Island

Rua introduced us to weaving properties of the fronds. She demonstrated how to get the whitau/fiber from the fronds. It was easy to see and feel the different properties in strength and softness. I was surprised to hear from Debra that harakeke whitau is the strongest vegetable fiber measured in the world. She did point out that *Cordyline australis*. Ti has not been measured yet and is likely to prove stronger.

"Cleaning" the plants regularly, something that is achieved by weavers as they harvest the plants for material, is not happening at the site. Rua and Debra both felt that regular cleaning is important for maintenance of the health of the individual plants in the collection.

Rua demonstrated traditional cleaning and gathering techniques. Firstly, a

Karakea or prayer to protect the cutter and to pay respect for the life force of the plant. The fronds are cut with a sharp knife, leaving the rito, the three fronds in the centre of each fan. The clean fronds are used for weaving and the dead and diseased fronds are removed. There are tikanga or protocols around cutting, which have both spiritual and practical origins. We were required to work within these tikanga.

Traditionally any material not used for weaving was returned to the base of the plants but now for disease control the fronds are disposed of by composting in another place or burnt and the ashes returned to the site.

The Dunedin Collection.

We then moved on to the main feature of the day, which was the work Debra and Rua are involved in with Bronwyn Lowe from Clothing and Textile sciences at Otago University. Tom Myers from the Botanical Gardens is also part of the team. The project is the Dunedin Botanic Garden harakeke and whahariki project. The research is based on a flax collection donated to the Dunedin Botanic gardens about 1909 by Mr Matthews a Dunedin horticulturalist. The collection was originally planted in the lower garden but was moved up to the Lovelock Ave sites in 1922-23. The collection is not well catalogued and or documented and information has been lost with each translocation. However, the collection is considered to be valuable as it may contain unique Te Waipounamu /South Island cultivars. There are presently 109 plants from his collection in about a two-meter wide strip on the South edge of the Botanical Gardens. With a wire fence on one side and a drain and sealed pathway on the other side the plants have little room to spread but are easily accessible for viewing and cleaning.

The Dunedin Botanic Garden harakeke and whahariki project started in April 2007 funded by a Foundation for Research, Science and Technology Te Tipu Puutaiao post-doctoral fellowship. It is due to finish by April 2010.

The aim of the project is to discover more of the distinctiveness of the Dunedin Botanic Gardens Collection. Researching both written and oral history of the collection, identifying and documenting the characteristics of each individual plant and measuring the strength and properties of the whitau/fiber of each plant. Where appropriate, it is planned with Ngai Tahu to develop a whakapapa/identity, geneology for the cultivars based on knowledge obtained and it is planned to name the individual cultivars.

The planned realignment of Lovelock Avenue will pass right through the site where the 109 plants are and it is expected that on about August 25th 2008 they will be moved. Rua, Bronwyn and Debra are coordinating the transplanting of the plants along the edge of the path to various Otago based users of cultural material and others. It is expected that about 4000 fans will be moved. I put my name on four different cultivars and maybe other members did as well.

So with our new skills and knowledge we "cleaned" many of the plants to help in the preparation for moving. Most of the undamaged fronds were destined for weavers in the city but a few of us learnt how to make a putiputi or flax flower from a frond. And we left the day feeling we had helped a little with an important project.

Impressions of the day

It was interesting to focus away from the ecological and botanical aspects of the plants and consider their place within a cultural and social context. *Phormium tenax* in particular must have been such a life saver for early Maori and it is no wonder it was, and still is, so valued and treasured. The fibers, easily stripped from the fronds provided so much for clothing, footwear, shelter, warmth and comfort. They helped to provide food, snares for catching birds, fishing line and nets for catching fish and of course from the treated fronds baskets for storage and cooking and travelling. Floating vessels were made from the flower stalks and the sugar from the flowers was a sweetener. On top of all this the gelatinous sap pia, easily extracted from the base of the frond was used to treat burns and abrasions. There are many other recorded medicinal uses for example in poultices for boils, arthritis and tumors, and as a liquid as a laxative and or for treating diarrhea. Of course in more recent time Maori traded flax with the European settlers and by the start of last century Harakeke fiber was New Zealand's biggest exporter. Flax Mills were common in any area that had a good supply.

So, what of the future of the Dunedin Botanical Garden Harakeke and whaririki collection? Despite the need to move many of the plants it will continue. We look forward to hearing more about the Dunedin collection once the project is completed

Janice Lord bundling up cut flax. Photo by John Barkla.

June Meeting – Talk by Dr Lisa Russell on the expanding range of *Undaria* in Southern New Zealand

John Barkla

Lisa began by describing the process and consequences of invasion in the marine environment. One major difficulty is the identification of invasive marine species. In 2004 it was predicted that 148 marine species (animals and seaweeds) have been introduced into New Zealand over the last 200 years equating to 1.4 species/year. It is believed that 96 % of these have arrived through shipping. Lisa then described the main lines of biosecurity work aimed at dealing with these problems. These include ports and harbour surveys (baseline list of species), a marine invasive species taxonomic service, surveillance, and vector management (monitoring movements of boats).

We then learned about one particular marine invader, the seaweed *Undaria pinnatifida*, native to Japan, Korea and China, but now established in temperate coastal regions of the northern and southern hemispheres. It's rated in the top five of the world's worst 100 invasive species. *Undaria* has a high growth rate of 1.4 cm/day and takes just 50 days to reproductive maturity. It has a bi-phasic life history, which has been an important factor in helping its dispersal between hemispheres by way of transportation of the microscopic gametophytic stage in ship ballast. There are no morphologically similar species in New Zealand and possible impacts include the displacement of native species, changes to marine ecosystems, and economic impacts.

Various control measures have been used and have included manual eradication, hot water treatment, and the use of polythene coverings. It was successfully eradicated from a vessel that sank off the Chatham Islands.

Lisa then discussed the spread of *Undaria* in New Zealand since its introduction to Wellington in 1987. It has spread through the South Island and as far south as the Snares Island and there is evidence of northwards spread in the North Island. Lisa's own research was based around the question of whether *Undaria* can invade wave-exposed sites. She showed maps of its spread through the Otago Harbour since its introduction in 1990 and graphically showed that it was now throughout most of the harbour. Unfortunately it is also present at several wave-exposed sites north of Otago Harbour. The only good news is that it is not yet present in the Catlins or in Fiordland.

In conclusion Lisa reiterated that *Undaria* is escaping from initial founding sites, has a broader niche than native kelp, can establish reproductive populations in locations subjected to significant wave action, and is likely to have profound effects on marine communities. Thanks for a stimulating presentation with a timely and cautionary message.

Trip Report *Allison Knight*

Berwick Bogs and Bits of Forest, 28 September 2008

For the few who made the effort to front up at the body clock equivalent of 7 am on a fine Sunday morning, John Steel led an extraordinary trip to hidden gems not normally accessible. After passing through kilometres of Berwick pine plantation and several locked gates John guided us down Halfway Road to a jewel of a podocarp forest remnant. This was once a public Forest Service amenity, enhanced with a picnic site and interpretative nature walks, but now falling into sad disrepair.

First off we tackled the track on the slope above the picnic area. Discovery of a rare photosymbiodeme of the foliose lichen *Pseudocyphellaria rufovirescens*, with lobes containing green algae projecting from the grey cyanobacterial lobes, encouraged me to start adding more lichens to John's species list. Others marvelled over the mix of mature podocarps, and debated the finer points of distinguishing matai from miro. *Thelotrema lepadinum*, a lichen indicator of old growth forest with high conservation value, was noted. Then we explored the overgrown track down into the forested gully. It was astonishing how different the plant community there was from that on the upper slope. Even the rich lichen communities showed quite different compositions.

Lunch in the sun was followed by a drive onward and upward, through more locked gates and many more hectares of pines, which lessened in height as the altitude increased. Finally we were up into extensive tussock land, recently over-planted in pine. There, down in a boggy basin just below Reidpath Rd, was a scruffy-looking area that John regards as the greatest botanical treasure of the Berwick Forest Wenita estate. Once he enlightened us, we could see that laid out before us were fine examples of three different raised bog communities, slowly built up over centuries.

After jumping the deeply cut perimeter stream and negotiating our way through lumpy *Carex* spp sedges we came to the raised *Empodisma minus*/*Sphagnum cristatum* community, continually growing upwards on its own detritus. A little further in was a spectacular lichen bog community showing clearly the differences between the beautiful perforate *Cladia retipora* and the darker *Cladia sullivanii*; as well as the confusingly branched cream *Cladonia confusa* and the whiter *Cladonia mitis*. On firmer ground towards the middle woody plants were starting to come in. There were several *Veronica* species, including *V. odora* (how sad to lose all our familiar Hebes!), and the stunted bog pine, *Halocarpus bidwillii*.

While John pondered what to do about his flat battery I investigated a shady roadside bank dominated by colonising and stabilising lichens and mosses. Luckily jumper leads saved the day and provided a happy ending to a very rewarding trip. Additions to John's

species lists include 2 fungi, 63 lichens, mosses and liverworts and vascular plants.

Reidpath Road Bog

John Steel

Upper Berwick Forest – Wenita Forestry Site, Berk 116. UPBE1 - East of Reidpath Road north its intersection with Banishiel Road. NZMS 260 H44 Milton 712 738 169° 55' E 45° 54' S 600 m. Visited with Otago Botanical Society 28.ix.2008c

Species list

Fungi:

Amanita muscaria
Dacrymyces stillata
Suillus granulatus

Lichens:

Baeomyces heteromorphus
Buellia griseovirens
Caloplaca ferruginea
Caloplaca subpyracea
Cladia aggregata
Cladia retipora
Cladia sullivanii
Cladonia confusa
Cladonia mitis
Cladonia tessellata
Haematomma babingtonii
Hypogymnia lugubris
Hypogymnia subphysodes
Lecanora caesiorubella
Lecanora symmicata
Lecidella elaeochroma
Menegazzia neozelandica
Menegazzia pertransita
Menegazzia subpertusa
Omphalina alpina
Parmelia cuninghamii
Parmelina labrosa
Parmelinopsis cf. swinscowii
Placopsis gelida
Porpidia crustulata
Ramalina glaucescens
Ramalina unilateralis
Stereocaulon corticulatum
Stereocaulon ramulosum
Teloschistes velifer
Usnea cf. inermis
Usnea cornuta
Usnea inermis
Xanthoria parietina

Liverworts:

Austrofossombronia australis
Marchantia berteroana
Riccardia exilis

Mosses:

Breutelia pendula
Bryum laevigatum
Hypnum cupressiforme
Ptychomnion aciculare
Sphagnum cristatum

Ferns and fern allies:

Blechnum montanum
Blechnum penna-marina var. alpina
Blechnum procerum
Gleichenia dicarpa var. alpina
Histiopteris incisa
Hypolepis millefolium
Lycopodium fastigiatum
Polystichum vestitum
Pteridium esculentum

Gymnosperms:

Halocarpus bidwillii
Pinus contorta [e]
Pinus radiata [e]

Dicotyledons:

Acaena novae-zelandiae
Anaphaloides bellidioides
Anisotome aromatica
Callitriche stagnalis
Celmisia gracilenta
Cerastium fontanum [e]
Cerastium semidecandrum [e]
Chaerophyllum ramosum
Cirsium vulgare [e]
Colobanthus strictus
Coprosma cheesemanii

Coprosma ciliata
Coprosma dumosa
Coprosma propinqua
Coprosma rubra
Crepis capillaris [e]
Cyathodes pumila
Dracophyllum longifolium
Dracophyllum prostratum
Drosera arcturi
Epilobium alsinoides
Epilobium ciliatum [e]
Forstera tenella
Galium perpusillum
Gaultheria depressa
Gaultheria macrostigma
Gentianella bellidifolia
Geranium microphyllum
Gnaphalium limosum
Gonocarpus micranthus
Gunnera monoica
Helichrysum filicaule
Hieracium pilosella [e]
Hydrocotyle heteromeria
Hydrocotyle tripartita
Hypochaeris radicata [e]
Leontodon autumnalis [e]
Mycelis muralis [e]
Nertera depressa
Olearia lineata
Ozothamnus leptophyllus
Pentachondra pumila
Ranunculus foliosus
Ranunculus glabrifolius
Senecio biserratus
Senecio minimus
Stellaria alsine
Stellaria parviflora
Trifolium repens [e]
Veronica odora
Viola cunninghamii
Viola lyallii
Wahlenbergia albo-marginata

Monocotyledons:

Agrostis capillaris [e]
Agrostis muscosa
Anthoxanthum odoratum [e]
Aporostylis bifolia
Astelia nivicola
Carex coriacea
Carex secta var. secta
Carex secta var. tenuiculmis
Chiloglottis cornuta
Chinochloa rigida
Chionochloa rubra var. cuprea
Cortaderia richardii
Corybas sp.
Eleocharis acuta
Empodisma minus
Festuca rubra
Glyceria fluitans
Herpolirion novae-zelandiae
Hierochloë novae-zelandiae
Holcus lanatus [e]
Isolepis cernua
Juncus articulatus [e]
Juncus novae-zelandiae
Luzula rufa
Oreobolus pectinatus
Poa cita
Potamogeton cheesemanii
Rytidosperma sp.
Thelymitra sp.
Uncinia rubra

Moira Parker cleaning flax on the flax garden field trip. Photo by John Barkla.

The Flora of the Forties and Fifties, a talk by Lorna Little on 16th July 2008

Moira Parker

Lorna Little was one of five Enderby Scholarship students to visit the Subantarctic with Heritage Expeditions this year. The 72 m ship carried 48 passengers and 27 Russian crew on an 8-day voyage to Campbell, Auckland, Enderby and the Snares Islands.

The 36-hour sea voyage from Bluff gave time for lectures and talks about the Subantarctic, at least for those passengers who felt well enough. The first port of call was Campbell Island, and a walk in the glacial valleys to see the colourful megaherbs, including the endemic daisies of the *Pleurophyllum* genus and the gentian *Gentianella antarctica*. In the afternoon, there was the thrill of walking among the large colony Southern Royal albatrosses. However, a 6-hour walk, the next day required strong nerves in order to negotiate the many New Zealand sea lions along the track. Lorna commented that no one had told the sealions about the "6 metre rule" – this is the guideline that humans should abide by when viewing the wildlife. As well as the numerous sea lions, there were giant petrels and the glorious pink flowers of *Anisotome latifolia*.

Lorna admitted to one episode of sea sickness during the 8 day voyage, and that was during the rough trip between the Campbell and Auckland Islands. Auckland Island, the largest of the Subantarctic islands, has forests of Southern rata, *Metrosideros umbellata*, which is the same species that grows in the South Island. Enderby Island, a small island north of the main Auckland Island, looked magnificent with a veil of red rata flowers covering the forest canopy. Lorna described walking on this island, only 10 km around the perimeter, as a fantastic experience. As well as the magnificent *Stillbocarpa polaris* with its huge rhubarb like leaves, there were a few parakeets to be seen.

The next stop was the Snares Islands, where to prevent pests reaching them, landing is not permitted. In calm weather the islands can be explored in Naiad inflatable boats. The thick leaved tree daisy *Olearia lyallii* was seen along the shoreline. Bird life was abundant, as the islands are a breeding ground for the sooty shearwater and home to the Buller's mollymawk and the comical looking Snares crested penguin.

Eight days after leaving Bluff, Lorna was cruising past Stewart Island on her return home. Her enthusiasm for these remote islands was evident during her stimulating talk. Thank you, Lorna for telling us about your exciting trip. I'm sure there were a few members in your audience who dream of making this once in a lifetime voyage.

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