Wellington Botanical Society

NEWSLETTER December 2003

Last issue: October 2003 ISSN 1171-9982

Changes to the Rules of the Society

In accordance with Rule 10 of the Society's Rules, notice is hereby given that at the General Meeting of the Society on 16 February 2004 a motion will be made to change Rules 10 and 19 of the Society's Rules.

The proposal for the changes are set out on page 9 in this Newsletter.

BotSoc Bulletins

Would you like to build up your library of our "flagship" publication? We have the following back issues available:

No.23 – Sept 1950; No.30 - 12/58; No.32 – 12/61; No.33 – 2/66; No.34 – 11/67; No.36 – 12/69; No.37 – 11/71; No. 38 - 9/74; No. 39 – 10/76; No.40 – 8/78; No.41 – 9/81; No. 42 – 9/85; No. 43 – 4/87; No.44 - 11/88; No. 46 – 12/94; No.48 – 9/02.

We also have copies of the index to Bulletins Nos. 1–35. NOTE: the staples in issues before 1989 are rusty, but the articles are wonderfully informative on a wide range of botanical topics. Boost your library, and BotSoc's finances, by ordering from the above list. $3 incl per single copy; $14 incl p&p for 5 copies. WBS, Box 10 412, WN, ph/fax 04 475 7025, e-mail kevin.clark@clear.net.nz

The Committee

Peter de Lange FLS

We congratulate Peter who, on 23 May 2003, was elected a Fellow of the Linnean Society (FLS) for "Excellence in New Zealand vascular plant biosystematics and threatened plant conservation, classification and management".

When last updated, in 1999, there were nine living FLS listed in New Zealand, including botanists: Dr Elizabeth Edgar, Dr David J Galloway, Dr David R Given, Mr E Dan Hatch, Dr Mark F Large, Dr Neville T Moar, and Dr Brian G Murray.

Well done Peter!

The Committee

Articles for web site

We welcome articles for consideration for inclusion on our web site: www.wellingtonbotsoc.wellington.net.nz

Please send your article to pennyc@clear.net.nz,

OR post it to Wellington Botanical Society, PO Box 10 412, Wellington, attention: Penny Currier and Julia White;

OR fax it to Barbara Mitcalfe 04 475 7149.

Manawa Karioi Society Revegetation Programme Work Bees

10.00 am every Wednesday and 2nd Sunday each month.

Lunch provided.

Potted locally-sourced native seedlings welcome. Thank you.

Contact:

Morgan Cox ph 383 5168 or

Sally Bowman ph 934 7041

Wellington Botanical Society

President:	**Chris Horne**	**475 7025 (ph/fax)**	
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	e-mail: kevin.clark@clear.net.nz		
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Web site:	**www.wellingtonbotsoc.wellington.net.nz**		
Bulletin Editor:	**John Sawyer, DOC, PO Box 5086, Wellington**		

Contributions for Newsletter (news, views, information) to:

Chris Horne, 28 Kaihuia St, Northland, WN 5. Ph/fax 475 7025

Annual Subscription: ordinary $32; joint $42, country $26; student $20.

Send your subscription to Treasurer, WBS, PO Box 10-412, WN.

New subscribers: Please complete form at the back of this newsletter.

Meetings

BotSoc meetings are usually held at 7.30 pm on the third Monday of each month at Victoria University, W'gton – Lecture Theatre 101, ground floor, Murphy Building, west side of Kelburn Parade. Enter building about 20 m down Kelburn Pde from pedestrian overbridge.

Field trips

Day trips to locations in the Wellington region are usually held on the first Saturday of each month.

Extended excursions are usually held at New Year, first weekend in February and Easter.

DEADLINE FOR COPY FOR NEXT ISSUE – 15 March 2004

ATTENDING FIELD TRIPS AND MEETINGS

Ideas please

We welcome your ideas about:

- places to visit on field trips
- topics for evening meetings
- speakers at evening meetings.

Please send ideas to our secretary, Barbara Clark, PO Box 10-412, Wellington 6036, ph 233 8202.

Field trips

If you intend to join a trip, **PLEASE** phone the leader at least **TWO DAYS** beforehand. This will enable him/her to arrange for a copy of the species list for you, and to let you know of any changes and/or particular requirements. If you cannot ring so far in advance, you are still welcome to join on the day.

Clothing for field trips

Sun hat, balaclava1 or hat1, waterproof/windproof parka, long-sleeved cotton shirt, singlet[1], bushshirt[1], 1 or 2 jerseys[1], waterproof/windproof overtrousers, nylon shorts, longjohns[1], longs[1], underclothes, swimming togs, 4pr socks[1], hut shoes, boots, gaiters, mittens[1], handkerchief.

Day trip gear

First aid kit, compass[2], map[2], insect repellant, whistle, matches in waterproof container, water purification tablets, water bottle, thermos, pocket knife, camera[2], binoculars[2], hand lens[2], note book[2], pen and pencil[2], sunblock, sunglasses, large plastic survival bag to line pack.

Overnight trip gear and food

As well as the day trip gear listed above, bring torch, spare bulb and batteries, candle, mug, plate, knife, fork, spoon, small towel, soap, tooth brush, tent, fly, poles and pegs, groundsheet, sleeping mat, sleeping bag, liner and stuff bag. Bring bread, butter/margarine, biscuits, fresh fruit and scroggin. SCROGGIN = Sultanas, Chocolate or Carob, Raisins, Orange peel, Glucose[3], Ginger, Including Nuts.

1 = wool, polypropylene or polarfleece as applicable.
2 Optional
3 Dried apricots are recommended instead of glucose but would spoil the acronym!!

BotSoc equipment

In addition to the gas stoves, billies, kitchen utensils, flies etc., used on our long field trips, we have the following for use on any field trip:

- a first aid kit. NOTE: anti-histamines NOT included, because of short shelf-life
- ten NZMS 260 Sheet R27, Pt.Q27 maps
- ten Silva Type 3 compasses

If you are leading a BotSoc trip, and would like to take these items, please ring Chris Horne ph 04 475 7025, or Barbara Mitcalfe ph 04 475 7149.

Fitness and experience

Our field trips vary considerably in the level of fitness and tramping experience required. Although our main focus is botanical, our programme sometimes offers trips which, in the pursuit of our botanical aims, are more strenuous than others. Although leaders take care to minimise risks, everyone participates at their own risk. If you have any questions about whether you are fit enough for a particular trip, please contact the leader well beforehand.

Reimbursement of drivers

If you travel on a trip in someone else's vehicle, please pay your share of the running costs to your driver. If a trip on the inter-island ferry is involved, please pay your driver your share of the ferry fare.

Meetings

Public transport to meetings

You may find the following bus services useful. They stop on Kelburn Parade, about 50 m from Lecture Theatre M101 in the Murphy Building, Victoria University:

TO MEETINGS

No. 23 Mairangi–6.30 pm from Houghton Bay,

6.40 Zoo, 6.50 Courtenay Place, 6.57 Pastoral House, 7.02 University.

No. 23 Mairangi–6.55 pm from Southgate, 7.05 Hospital, 7.15 Courtenay Place, 7.22 Pastoral House, 7.27 University.

No. 22 Southgate–6.55 pm from Mairangi, 7.10 University.

No. 23 Houghton Bay–7.25 pm from Mairangi, 7.40 University.

No. 17 Railway Station – 6.35 pm from Karori Park, 6.52 University.

Cable Car at 00, 10, 20, 30, 40, 50 min past each hour from Lambton Quay terminus. Alight at Salamanca Station.

FROM MEETINGS

No. 23 Southgate – 9.10 from University.

No. 23 Southgate – 10.10 from University.

Cable Car at approx. 01, 11, 21, 31, 41, 51 minutes past each hour from Salamanca Station.
Last service 10.01 p.m.

For further information ring Ridewell Enquiry Service 801-7000.

Help the Editor

Compiling this newsletter takes several days. If you can help by word-processing your own material and sending it on disk, preferably in Microsoft Word, it would be much appreciated.

FIELD TRIPS AND EVENING MEETINGS: JANUARY–MAY 2004

The following programme IS SUBJECT TO CHANGE. If you wish to go on a field trip, PLEASE help with planning by giving the leader 2 days' notice before a day trip, MORE notice before week-end trips, and SEVERAL WEEKS' notice before the New Year's trip.

Saturday 24 January: Field trip **Otari-Wilton's Bush off track**

Botanise 'Bledisloe Creek' and some of Dr Cockayne's plantings near Flax Clearing. See planted mistletoe, large pukatea, recently-found wharangi, and numerous fern species. Boots essential. Meet 8.45am at Izard Park, Wilton Road, opposite Norwich Street. Catch no 23 Mairangi bus 8am from Houghton Bay, 8.20am from Courtenay Place. Alight at terminus.
Co-leaders Chris Horne 475 7025, Barbara Mitcalfe 475 7149.

Sat\Sun 14-15 February: Field trip **Corner Creek, Wharekauhau Stream or Mukamuka beach**

Help search for Dactylanthus taylorii in Corner Creek and compile the first survey of either the Mukamuka area beach or the upper Wharekauhau Stream at Ocean Beach, Palliser Bay, South Wairarapa—depending on the weather. Accommodation at Sunita's bach: 4 bunks, 1 dbl floor mattress space, 1 bed-settee and 1 tent site. Unlimited tent sites in sheltered camping area three minutes away; use bach facilities. Pot luck dinner.
Co-leaders: Sunita Singh and Gavin Dench 04 387 9955.

Monday 16 February: General meeting/Evening meeting **Fuchsia in the Tararuas**

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Steve Urlich, Forest Ecologist with the Department of Conservation, has been monitoring fuchsia/*Fuchsia excorticata* in the Tararua Range over the past 10 years as part of a possum control programme in place since 1994. In this talk he presents an analysis of possum impacts on fuchsia, and how successful possum control has been.

Saturday 6 March: Field trip **Orongorongo Station, Lower Coast Rd, Wainuiomata**

Botanise coastal shrubland with *Discaria toumatou*, *Muehlenbeckia astonii*, *Korthalsella lindsayi*, *Ileostylus micranthus* and much more. Bring gloves to weed matagouri. Meet 9 am at carpark, east side Woburn railway station. Catch 8.25 am train from Wellington or 8.30 am train from Upper Hutt. Map R27, Wellington.
Leader: Chris Hopkins 564 3980.

Saturday 13 March: Field trip **Native forest in Wellington Botanic Garden**

Share your knowledge of native plants and communities with others on this trip which is BotSoc's contribution to Wellington City Council's FEELING GREAT *STEPPING* OUT! walk promotion this month. Botanise the five remarkable areas of native forest so close to the CBD, just as John Buchanan did in 1875!

Co-leaders: Barbara Mitcalfe ph 475 7149, Chris Horne ph 475 7025.
Meet: Founders Entrance, Glenmore St. @ 9 am Bring lunch and drink.
Catch 8.40 am No.12 Karori Park bus from Courtenay Place. Alight at Founders Entrance.

Monday 15 March: Evening meeting **Offshore Islands of New Zealand**

PLEASE NOTE CHANGE OF SPEAKER AND TOPIC
Carol West, Conservancy Advisory Scientist for Southland Conservancy, Dept of Conservation, will talk about natural history, issues and management relating to a range of outlying, offshore and inshore islands from the subtropical to the subantarctic. The talk will be illustrated with slides.

Friday 9 April – 11 April (Easter): Field trip **Mangaweka area**

(Option to Tuesday 13 April) Visit Titirangi Reserve in the Kawhatau Valley, Paengaroa Reserve near Taihape. Weather permitting, climb to Rangiwahia Hut and\or Mt Colenso. Stay at the comfortable Kawhatau Outdoor Education Centre. Bunk rooms $10.00 per night plus share of food costs.
Leader: Rodney Lewington (04) 475 3145.

Help raise funds for BotSoc's Jubilee Award Fund – bring named seedlings/cuttings for sale at each evening meeting

Monday 19 April: Evening meeting **Recent Wairarapa happenings**

PLEASE NOTE CHANGE OF SPEAKER AND TOPIC

Tony Silbery, Department of Conservation, Wairarapa will bring us up to date with everything: from new species in the Tararuas, rare species in the east, an exciting find in the north, and kokako and kiwi at Mount Bruce.

Saturday 1 May: Field trip **Te Harakeke wetland, Waikanae**

Botanise one of the largest wetlands on the Kapiti Coast. View open water and 43 ha of flax; also cabbage trees, kahikatea, pukatea and some podocarps. Gumboots essential. Meet: 32 Park Avenue, off Te Moana Road, 10am. Leader: Tim Park, 472 6626, deputy leader Barbara Mitcalfe 475 7149.

Monday 17 May: Evening meeting **Members' evening**

Please come and help make this an interesting evening. Share slides or photographs of recent trips. Bring prized plants to show. Brief botanical readings welcome.

EVENTS

1. **Restoring wetlands – a practical forum.** ***27 – 28 February*** *& optional field trip 29 February.* Wellington. A highly practical forum for people committed to wetland well-being. Training, knowledge exchange, networking and sharing stories. Register your interest in attending: e-mail: wetlands@gw.govt.nz, fax 04 385 6960, ph 0800 496 734. We are seeking people to present papers on:* practical wetland management; * restoration techniques; * case studies; * best practice. Send your abstracts to the e-mail address by *30 January.* Programme and registration details are on National Wetlands Trust web site www.wetlandtrust.org.nz. Supported by * The National Wetland Trust; * LGNZ Action Biocommunity Programme (www.biocommunity.org.nz); * Greater Wellington Regional Council.

Frances Forsyth, Wetland Symposium event organiser.

2. **Big Red exhibition.** To ***29 February***. Rotorua. Celebration of pohutukawa with historical and contemporary art, photography, poetry, literature, audio-visual presentations and objects.

3. **Coastal Dune Vegetation Network Conference – communities caring for their coasts.** *10 – 13 March*. Te Papa, Wellington. The CDVN is a collaborative research network involving more than 200 organisations and individuals including regional and district councils, Crown Research Institutes, forestry companies, tertiary education institutes, iwi, consultants, nurseries and community groups such as Beach Care and Coast Care. *DAY 1*: a.m.: registration, welcome, opening speeches, introduction to the region; p.m.: field trip to southern coastline, and dunes in inner Wellington Harbour. *DAY 2:* CDVN AGM, discussion about funding opportunities for community groups and for dunes on private land, coastal policy, the place of coastal restoration, community group development, safety and OSH implications, restoration principles, threatened plants, cultural plants, recreational impacts, coastal birds. *DAY 3:* Field trip to Kapiti Coast. *DAY 4:* optional field trip to Wairarapa Coast. Registration fee - $95. Make cheques payable to Forest Research; conference dinner $35. Registration form and fee by *27 February* to: Greg Steward, Secretary, CDVN, Forest Research, PB 3020, Rotorua. Ph 07 343 5899, greg.steward@forestresearch.co.nz

4. **Percy Scenic Reserve open day.** ***End March – early April.*** Ring Jill Broome ph 570 6505 for details.

5. **Tongariro collectables auction.** ***20 October.*** Wellington. Tongariro Natural History Society is celebrating 20 years of support for Tongariro National Park. Auction of central North Island items. Funds raised to go to TNHS and the Mt Pihanga/Lake Rotopounamu mainland island restoration project. Items can be donated, or will be sold on commission (25% to TNHS). Please look for items NOW!: books, art, memorabilia, collectables e.g. skis, sleds, maps, diaries, anything with TNP/Lake Taupo associations. Sarah Gibb, AUCTION CO-ORDINATOR/Executive Officer, TNHS, Box 238, Turangi. E-mail: info@tongariro.org.nz Ph 07 386 9237.

PUBLICATIONS

1a. **Pest plant atlas – Wellington Conservancy excluding the Chatham Islands.** Vol.1. C Howell, P Hughes, J Sawyer. 53 p. 2000. Vol.2 K McAlpine, J Sawyer. 2003. 88 p. $15 each, **or** $20 for the two volumes.

1b. **Threatened plants of the Chatham Islands.** G Walls, A Baird, P de Lange, J Sawyer. 2003. 88 p. $20.

1c. **Endemic plants of the Chatham Islands.** P Crisp, C Miskelly, J Sawyer. 2000. 47 p. $20.

Note: 1b and 1c $30 for the two booklets.

1d. **FOOTnotes.** Issue 20, 10/03: Comments sought on visitor facility improvement plans by 31 January; tree planting on Chatham Is; plantings of native species to replace pines felled at Catchpool;; plantings of rare plants in Wairarapa; > 1000 potential weed species in Wellington region;

Dept. of Conservation, Box 5086, WN.

2a. **Post-pastoral succession in intermontane basins and valleys of eastern South Island, NZ.** S Walker, WG Lee, GM Rogers. 2003. Science for Conservation 227. 75 p.

2b. **ConScience.** No.48, 30/10/03: P de Lange appointed a Fellow of the Linnean Society of London; the need for contingency planning in Wellington Conservancy; etc.

2c. **DOC science publications.** Now available at www.doc.govt.nz, then follow links to Publications, then to Science and Research, then to the series you are interested in. Use the 'find' function (Ctr + F) to search for particular words on that page.

2d. **Growth and habitat of *Sebaea ovata* (Gentianaceae) in NZ and Australia.** PD Champion, DE Hofstra, ME Auger, CEC Gemmill. 2003. Science for Conservation 229. 32 p.

2e. **Ephemeral wetlands and their turfs in NZ.** PN Johnson, G Rogers. 2003. Science for Conservation 230. 109 p.

2f. **Long-term influences of introduced deer on the composition and structure of NZ *Nothofagus* forests.** SW Husheer, DA Coomes, A Robertson. 2003. Forest Ecology and Management 181: 99-117.(No longer available from DOC).

2g. **Our picturesque heritage – 100 years of scenery preservation in NZ.** T Nightingale, P Dingwall. 2003. 68 p. $31.95 incl p&p.

DOC Science Publishing, Box 10 420, WN. Fax04 496 1929. E-mail: science.publications@doc.govt.nz

3. **A checklist of indigenous vascular plants of NZ.** 10th revision – 20/8/99, last updated 18/11/03. $6.

Shannel Courtney, Nelson /Marlborough Conservancy, Department of Conservation, Private Bag 5, Nelson.

4a**. Destroy bad berries.** Pamphlet.

4b**. Do your bit to stop weeds from ruining our environment.** Pamphlet.

4c. **Pest plants of the Greater Wellington region.** 8 p.

4d. **Invasive creepers and climbers – pest plants – everyone's responsibility.** Brochure. 6 p.

4e.. **National pest plant accord list.** Plants prohibited from sale, propagation and distribution in NZ. See also www.protectnz.org.nz

4f. **Regional pest management strategy operational plan 2003/04.** View it at Greater Wellington Regional Council offices in Masterton, Upper Hutt, Wellington, or www.gw.govt.nz

4g. **Regional Parks network management plan.**

4h. **Belmont Regional Park management plan – Newsletter 2.**

GWRC, Box 40 847, Upper Hutt. Ph 526 5325; Wairarapa 06 378 2484.

5. **The state of our environment – annual summary 2002-2003.**

Greater Wellngton Regional Council, Box 11 646, WN. Ph 04 384 5708.

6a. **Practical guide to natural features on farms.** 12 p.

6b. **Managing natural features on farms.** 8 p.

Environment Waikato, Box 4464, Hamilton East. Freephone 0800800401, e-mail farmenvironment@clear.net.nz

7. **NZ water plants – A guide to plants found in NZ freshwater.** BT Coffey, JS Clayton.

8. **Wellington ecological restoration directory – restoration sites, organisations, native plant nurseries.** 10/03. *NZ Ecological Restoration Network. Box 9000, CH. Ph 03 338 5451, fax 03 338 5481. e-mail office@bush.org.nz, www.bush.org.nz* Subscription: non-profit community groups, family (whanau, family, flat) $30 for **3** years.

9. **NZ National Parks & Conservation Foundation.** Pamphlet. Donations welcome. *NZNP&CF, Freepost 156293, Box 3058, WN.* More information, and make donations at www.nationalparks.org.nz.

10. **True colours.** Rotorua Crimson Trail; Big Red exhibition in Rotorua to 29/2/04; northern rata planting on Mana Island and in Golden Bay; Coromandel Pohutukawa Festival; rata restoration in Southland; etc. *Project Crimson, Box 301 027, Albany, AK. Ph 09 414 0466, e-mail: info@projectcrimson.org.nz*

11. **Weedbusters.** Information pack. *Amber Bill, National Weedbusters Co-ordinator, Dept. of Conservation, PBag 4715, CH. Ph 03 371 3720, e-mail* abill@doc.govt.nz

12. **Weed education web site.** Information, resources and learning activities on weed ecology and control, aimed at teachers, students, community groups and weed control practitioners. Developed by Landcare Research: http://www.landcareresearch.co.nz/education/weeds. Comments to Margaret Stanley: stanleym@landcareresearch.co.nz

13. **Freedom of the hills – unlocking high country recreation – a Federated Mountain Clubs vision for pastoral lease lands.** 24 p. $5 incl p&p. *FMC, Box 1604, WN.*

14. **Koiata Botanical Trust – supporting the understanding of the NZ flora.** Pamphlet. *CA Hooker, Chartered Accountant, Secretary, KBT, Box 4415, CH. Ph. 03 374 5448, fax 03 374 5449.* A copy of the Trust's fund-raising pamphlet is enclosed with this Newsletter.

15. **Forest & Bird.** No.309, 8/03: taxonomy of *Sophora* outlined.; fungi and threats to them; seaweeds/marine algae; etc. No.310, 11/03: The search the 'most favourite' NZ plants; what leaves do; etc. *Royal Forest & Bird Protection Society, Box 631, WN. Ph 04 385 7374, fax 04 385 7373, e-mail* office@wn.forest-bird.org.nz *web site www.forest-bird.org.nz* Subscriptions: single/family/non-profit group - $52; senior citizen/senior family - $39; student/school - $35.; life - $780.

SUBMISSIONS CALLED FOR

1. **Towards a better network of visitor facilities.** Documents from, and submissions *by 31 January* to Wellington Conservancy, Dept. of Conservation, Box 5086, WN. Ph 04 472 5821, fax 499 0077. See proposals at www.doc.govt.nz
2. **Draft open space access plan – "tracks plan".** 12/03. Document from, and submissions by ***16 February*** to, Hilary Harrington, Parks Planner, Wellington City Council, Box 2199, WN.

GRANTS

Biodiversity Condition Fund and the Biodiversity Advice Fund are a government initiative to enhance management of indigenous biodiversity outside public conservation lands (e.g. private land or Maori land). **The Biodiversity Advice Fund** supports the provision of information and advice to land managers to assist them in managing indigenous biodiversity. It will fund projects that inspire landholders or groups to improve the condition of indigenous biodiversity. **The Biodiversity Condition Fund** aims to improve and maintain the condition of areas of indigenous vegetation, species and habitats (including wetlands and water bodies). The fund seeks to broaden community effort in the management of indigenous biodiversity, and to complement contributions for its enhancement. It will fund projects that enhance biodiversity outside public conservation lands, and particularly areas under legal protection. *Biodiversity Funds, Department of Conservation, PO Box 10420, WELLINGTON. Ph 04 471 3296, Fax 04 471 3130, e-mail: biofunds@doc.govt.nz*

SUBMISSIONS SYNOPSES DEC. 2003

WCC DRAFT MANAGEMENT PLAN FOR THE OUTER GREEN BELT, December. **Complimented** Council on their impressive research resulting in a thorough, comprehensive document; requested that pigs be added to the list of pest animals to be destroyed on, and in the vicinity of, the OGB; requested that only locally sourced, indigenous plant species appropriate to the Wellington area be selected for OGB plantings; suggested rates relief as a mechanism for encouraging owners of land on the OGB to protect natural landforms and indigenous vegetation; supported Council's initiative in proposing the OGB as a route for Te Araroa Walkway, linking with the city-wide Track Strategy; supported the use of original names for geographical features along the OGB; supported the proposed classification of OGB land as scenic reserve; recommended that no utilities be built on OGB ridges; Welcomed the emphasis on protecting streams and their native vegetation; for detail on how Council proposes to manage Darwin's barberry; recommended that native botanical and ecological information be featured in OGB interpretation. (NOTE: In a subsequent supplementary submission, for substantial funding to be allocated to pest animal control on and near the OGB because of the presence of huge numbers of goats and pigs particularly in the southwest. STOP PRESS: 17–12: We have just heard the good news that there is to be a DOC-led pest-animal control operation coordinated with WCC and RWRC, in the Wellington southwest.)

WCC SOUTH COAST MANAGEMENT PLAN: To Garry Poole, C.E.O. WCC, November: **Asked** for ecologically significant land covered by the South Coast Management Plan to be classified as Scenic Reserve under the Reserves Act 1977, Section 19(1)(a) and 19(1)(b), in order to give it the most effective form of protection.

To Stephen, Director, Urban Strategy, WCC: **Expressed** our strong support of the proposed Marine Education Centre but not on the proposed site, Te Rae Kaihau Point.

To Garry Poole, C.E.O. WCC, December: Welcomed the proposed use of a belt of trees to control odour at the Southern Landfill but expressed concern at the intention to use pines, (1) because of their propensity to self-sow into the surrounding ecosystem, (2) because of the lost opportunity to increase local biodiversity by planting appropriate Wellington native species and (3) because as they become senescent over the projected life of the landfill they will become a hazard to people and vehicles using the landfill; **recommended** instead, ngaio as a first choice because it is so fast-growing, followed by e.g. manuka, tree hebe, akiraho, kowhai, ti kouka, wharangi etc.

To Regional Conservator, DOC Wellington: whether WCC is justified in classifying ecologically significant land covered by the South Coast Management Plan as Recreation Reserve instead of Scenic Reserve.

REVIEW OF BELMONT REGIONAL PARK MANAGEMENT PLAN, October. **Offered** to update the park's native plant species list; **suggested** that adventive species also be listed to assist management; **recommended** that Nikau Covenant boundaries be rationalised to make fencing easier, and that the forest remnant centred on GR 713045 be fenced; **recommended** that natural landforms such as the regionally important peneplain (K surface) be protected from any further roading or above-ground installations; **suggested** that the WCC 79-ha block above Grenada North be managed as part of the regional park; additional accesses into the lower Korokoro Valley be found.

Barbara Mitcalfe

Student research grant

BotSoc has granted $500 to Harshi K Gamage for post-graduate research supervised by Dr Linley Jesson, at the School of Biological Sciences, Victoria University. The title of Harshi's project is *Comparative growth of congeneric homoblastic and heteroblastic plant species to sun and shade environments*.

Heteroblasty, in which plants have juveniles and adults markedly differing in growth habit, leaf size and shape, is unusually common in the New Zealand flora. It may have evolved to cope with changing light environments between juvenile and adult stages. They hypothesised that heteroblastic species, by having different leaf morphology at the seedling stage, would be more shade-tolerant than homoblastic seeedlings—plants with slight differences between juvenile and adult stages. Heteroblastic species would possess many shade-adapted morphological, anatomical and physiological attributes. This study examines these attributes among multiple seedling pairs of heteroblastic and homoblastic native New Zealand plant species under different light environments. Using pairs of congeneric homoblastic/heteroblastic species, and comparing their growth performance under different light environments will allow us to understand whether heteroblasty has a photosynthetic advantage over homoblasty in plants that experience different light regimes at different stages of development.

Aims of the research

- To measure seedling survival, leaf physiology, morphology and anatomy of heteroblastic seedlings, and to compare those to the homoblastic cogeners.
- The large number of comparisons possible in the New Zealand flora will allow rigorous statistical testing of the hypothesis, followed by development of a general model of advantages and disadvantages that can be tested worldwide.
- The absence of comparisons between closely related taxa is the main barrier to developing a general understanding of evolutionary changes in functional traits of leaves.

Significance of the research

This project investigates one of the great unanswered questions about New Zealand's biodiversity: why does the flora contain such an extraordinarily diverse array of species that produce multiple leaf forms during their life cycle? By applying a rigorous experimental approach to questions about the functional significance of diversity within the flora, they will make a significant contribution to knowledge about plant physiological adaptations to the environment that can be applied internationally.

Editor: adapted from application for grant

The fern *Polystichum* '*richardii*' around Wellington

Being partly responsible for the recent splitting of *Polystichum richardii* (= pikopiko = the common shield fern) into three species (Perrie et al., 2003: Evidence for an allopolyploid complex in New Zealand *Polystichum*. *New Zealand Journal of Botany* 41: 189-215), I have been asked to write an identification guide for the Wellington region.

The three species replacing *P. richardii* are *P. oculatum*, *P. neozelandicum*, and *P. wawranum*. *Polystichum richardii* is a later synonym of *P. neozelandicum*, and hence is not a correct name for any of these newly circumscribed species. The following table outlines the distinguishing characteristics of these three species. The scales from the rachis (upper frond axis or stem) and stipe (lower frond axis or stem) are especially important for identification.

P. oculatum	*P. neozelandicum*	*P. wawranum*
Scales from the lower rachis obviously scale-like, and **greater than 0.7 mm** wide at their mid length; almost **pentagonal** in shape (Perrie et al., 2003, fig. 5).	Scales from the lower rachis obviously **scale-like** but **less than 0.7 mm** wide at their mid length; **acicular-lanceolate** (like an isosceles triangle) in shape (Perrie et al., 2003, fig. 5).	Scales from the lower rachis appearing **hair-like** to the naked eye (Perrie et al., 2003, fig. 5).
Lamina and costae (pinnae mid-ribs) of **similar colour**, usually **dark blue-green**.	Lamina a lighter **forest-green** colour compared to dark blue-green colour of the costae (the mid-ribs of the pinnae).	Lamina a lighter **forest-green** colour compared to dark blue-green colour of the costae (the mid-ribs of the pinnae).
Indusia with **prominent** dark centres	Indusia with **prominent** dark centres	Indusia **often without** prominent dark centres
Spores **small** (36-48 μm × 27-36 μm)	Spores **big** (46-58 μm × 36-45 μm)	Spores **small** (40-48 μm × 29-36 μm)

Polystichum oculatum and *P. wawranum* are both tetraploid, each with four sets of chromosomes. They are morphologically quite different. However, *Polystichum neozelandicum* has an intermediate appearance, and could be confused with either of the other two species. *Polystichum neozelandicum* is octoploid, with eight sets of chromosomes, which is reflected in the bigger size of its spores. It appears to have originated from an allopolyploid event involving hybridisation between *P. oculatum* and *P. wawranum* – hence its intermediate appearance, spore size aside – and the doubling of chromosome number.

Polystichum oculatum and *P. neozelandicum* both appear to be fairly common around Wellington. For instance, both were seen on the recent Carey Gully trip, both occur at Makara, and I have seen both while running around Mount Victoria. *Polystichum oculatum* has a mostly eastern distribution from East Cape to Banks Peninsula, but it extends west around Cook Strait, as far north as about Pukerua Bay. *Polystichum neozelandicum* is more widely distributed and there are two subspecies: subsp. *neozelandicum* north of Rotorua, and subsp. *zerophyllum* south of Taupo. *Polystichum wawranum* is not (yet?) known from Wellington City. The most southerly records of *P. wawranum* that I know of are from Otaki Forks (the Waiotauru Track) in the west and Pongaroa in the east.

There are three other *Polystichum* species native to New Zealand: *P. cystostegia*, *P. silvaticum*, and *P. vestitum*. *Polystichum cystostegia* is widespread and fairly common in alpine areas of the South Island, but in the North Island it is only known from Mount Taranaki. It has quite large, pale-orange stipe and rachis scales, and its indusia are markedly convex (i.e., the outside margins of the indusia are closer to the frond than the main bodies of the indusia).

Polystichum silvaticum and *P. vestitum* are both found around Wellington. They can be distinguished from the other species by their rachis scales, which are bicolourous with a pale brown margin completely surrounding a dark brown centre. (Note that the other species, particularly *P. oculatum*, can have both pale and dark brown patches, but never with a dark centre surrounded by a pale margin.)

The best way to distinguish *Polystichum silvaticum* and *P. vestitum* is to look for indusia with a hand-lens or microscope. *Polystichum vestitum* has indusia, while *P. silvaticum* does not, even when the spore producing structures are young. (Be wary as the other species can lose their indusia with age. Therefore, in trying to make a definite identification of *P. silvaticum*, old fronds should be avoided. Look for fronds with either young or mature spore producing structures; these will look greenish-white and black, respectively. Old spore producing structures look brown.) Furthermore, *P. silvaticum* is usually confined to dark, wet habitats (i.e., alongside forest streams), while *P. vestitum* can be found in both shaded and open habitats.

A factor complicating identification amongst the native species of *Polystichum* is hybridisation, with *P. vestitum* being especially promiscuous. Hybrid plants are sterile and have aborted (abnormally formed) spores that can be seen with a microscope, but their recognition in the field can be difficult and requires familiarity with both parents. Like most hybrids, those between the native species of *Polystichum* combine the characteristics of both parents. For instance, the rachis scales of the hybrids *P. oculatum* × *P. vestitum* and *P. neozelandicum* × *P. vestitum* have the pale brown margins as found in *P. vestitum*, and the cilia-like marginal projections found in *P. oculatum* and *P. neozelandicum* but unknown in North and South Island *P. vestitum*. Distinguishing *P. oculatum* × *P. vestitum* and *P. neozelandicum* × *P. vestitum* can, however, be difficult.

A handful of adventive *Polystichum* species also occur in New Zealand. They can be separated from the native species by their production of bulbils (Brownsey & Smith-Dodsworth, 2000: *New Zealand ferns and allied plants*. 2nd ed. Auckland, David Bateman Ltd.).

The following key will, I hope, assist with identifying native *Polystichum* from the Wellington City region. I have not included *P. cystostegia* or *P. wawranum* (see above for their distinguishing characteristics). The hybrids most likely to be encountered, *P. oculatum* × *P. vestitum* and *P. neozelandicum* × *P. vestitum*, are included, but others are not (e.g., *P. silvaticum* × *P. vestitum*, *P. oculatum* × *P. neozelandicum*).

1. Indusia absent .....***P. silvaticum***
   Indusia present..... 2
2. Rachis scales bicolourous with pale brown margin completely encompassing dark brown centre 3
   Rachis scales concolourous (uniformly dark brown, almost black, or pale brown), or if bicolourous not with a pale brown margin completely encompassing a dark brown centre 4
3. Indusia lacking an obvious dark centre; rachis scales without marginal projections; spores normally formed .....***P. vestitum***
   Indusia with an obvious dark centre; rachis scales usually with marginal projections; spores abnormally formed ***P. neozelandicum*** × ***P. vestitum*** or ***P. oculatum*** × ***P. vestitum***
4. Scales from the stipe-rachis junction > 750 μm (and usually > 1000 μm) wide at their mid-length, often almost pentagonal .....***P. oculatum***
   Scales from the stipe-rachis junction < 650 μm wide at their mid-length, generally acicular-lanceolate (like an isosceles triangle) .....***P. neozelandicum***

Although now living in Wellington, I cannot (yet) describe the local distribution of each species as well as I would like. However, readers might be interested in Perrie (2003: *Polystichum* in the Lower North Island. *Manawatu Botanical Society Newsletter* 30: 3–4), which lists sites for each species around Palmerston North, where I was based during my study. I am more than happy to assist/confirm identifications of *Polystichum* and/or supply additional information.

I can be contacted by mail (Leon Perrie, Te Papa, P.O. Box 467, Wellington), phone (04 381 7261), or e-mail: leonp@tepapa.govt.nz

Leon Perrie

Photos wanted

Pest plant images

Greater Wellington Regional Council are looking for high quality pest plant photos to use in their pamphlets. If you have any high quality photos of weeds like tradescantia, madeira vine, bomarea, or large infestation photos, please send them to us with your name and address so we can scan them into our computer. We will return the photos to you after they have been scanned. Greater Wellington Regional Council would like to thank all Wellington Botanical Society members for your continual support.

Mark McAlpine
Biosecurity Officer
PO Box 40 847,
UPPER HUTT

BotSoc brochure images

We are considering updating the BotSoc brochure. Have you any striking photographs, or slides, of a Wellington forest with people botanising in it? If you think they should be considered for use on the front of the revamped brochure, please send it to: Barbara Clark, Secretary, Wellington Botanical Society, PO Box 10 412, Wellington. If used, your work will be acknowledged on the finished product. All photographs and slides will be returned to their owners.

The Committee

Otari-Wilton's Bush news

Staff have been working hard to catch up with the Spring flush of weeds and to ready Otari for an assessment for inclusion on the directory of the New Zealand Garden Trust. If accepted, Otari-Wilton's Bush would feature on the trust's website which is designed to attract plant enthusiasts from New Zealand and around the world to visit.

Along the canopy walk the rewarewa is flowering and is visited daily by tui, and hinau is flowering adjacent to the deck outside the information centre. Rengarenga are at their best at the moment and there is a lovely sweep of them around the Kauri lawn. The perfume from the cabbage trees around the cabbage tree lawn is almost overpowering, as is the perfume from the hangehange, found all through the bush areas.

Mick Parsons has been working on the waterfall and nature trail steps to reduce the depth of the steps. Mick now has a permanent part time position at Otari.

Tim O'Leary has been reinstating the Dracophyllum garden after the disruption of a new track, Wilton's Walkway, which now runs through part of this garden. New plantings of Chatham Island forget-me-not and rengarenga will replace old tracks in this collection.

Dave Bidgood works with the Otari-Wilton's Bush Trust, Wellington City Council and Greater Wellington on the Kaiwharawhara Revegetation Project. Last year over 8,000 plants were planted along Kaiwharawhara Stream between Otari and Ian Galloway Park. On the second Saturday of each month between 9 and 11 a.m., volunteers are needed for releasing the plants. If you would like to join in, meet on the information centre deck at 9a.m. All equipment is supplied.

Eleanor Burton has been busy with the new Canterbury collection which will include areas for Banks Peninsula plants, sub-alpine and short tussock associations, and a shrublands and tall tussock area. There has a been a huge contribution to this area from all staff for rock placement and topsoiling. We are all looking forward to the completion of this project.

Plants of *Pimelea aridula* agg., a rare Wellington coastal pimelea, have been picked up by Peter Griffen from DOC Wellington. A dozen plants remain here and will be planted in the threatened plants border next autumn.

Pimelea aridula agg. Photo: Colin Ogle.

Raewyn Empson from Karori Wildlife Sanctuary has sighted a banded robin on the Blue Trail. Being banded means it has come from the sanctuary to find a new home with us. Lately there have been several sightings of bellbirds around the collections by the Cockayne lawn.

A new Botanic Gardens database for the plant collections is now "live", and our computer system at Otari is about to be upgraded. This will enable Otari to have two computers networked and should provide a faster, efficient service.

Robyn Smith
Curator Manager,
Otari-Wilton's Bush

Restoration at Titahi Bay

A couple of years ago I decided to follow the adage of "think global, act local" and try to help the plants around Titahi Bay. We have some very rare species in this area and they struggle with competition from mainly pasture grass but also bone seed and *Senecio glastifolius*. I approached the local ratepayers group to back the idea of a restoration area and we approached Porirua City Council to grow the plants for us and spray the area for planting each year. John Sawyer from DOC, Wellington checked and approved our species list. I collect all the seed and germinate it and hand it on to the PCC nursery when the plants are due to be bagged up. 2003 was the first year of planting and we only had time to produce 80 plants, mainly from cuttings. Although they weren't planted until early September, almost all survived. This winter we planted 350 in July and again have an almost perfect success rate. I am looking forward to when Colin Meurk's system for plant records is included on the New Zealand Ecological Restoration Network (NZERN) website so I will be able to be a bit more scientific with my records. The planting list for this area includes *Aciphylla squarrosa*, *Phormium cookianum*, *Melicytus* aff. *obovatus* "Coast", *Muehlenbeckia astonii*, *Poa cita*, *Euphorbia glauca, Coprosma repens, Elymus solandri, Disphyma australe*, *Hebe stricta* var. *macroura* and *Tetragonia trigyna*. Next year I also hope to include *Hebe elliptica* var. *crassifolia*, *Coprosma propinqua* and *Olearia solandri*. The plantings are on highly modified dunes near the south end of Titahi Bay and I hope the project will eventually include council land all the way to the parking area at South Beach access road.

Leptinella nana

The other project I am involved in is the trialing of new sites for *Leptinella nana* in erosion hollows on the top of the cliffs south of Titahi Bay. *Leptinella nana* (pygmy button daisy) is a tiny perennial herb which forms low open mats. It needs disturbed sites to colonise and is easily overcome by weeds. *L. nana* has a threatened status of Category A, critically endangered. It is found in only three sites in New Zealand, the Rai Valley in Marlborough, the Port Hills in Canterbury and Whitireia Park in Porirua. After reading the species recovery plan, I decided to try planting it in erosion hollows along the top of the cliffs just south of Titahi Bay. I chose this site as one of the aims of the recovery plan is to "establish at least one population at a new site" and because the vegetation surrounding these hollows is mainly native and not pasture grass. I thought this could possibly enable the *Leptinella* to spread around and down the cliffs.

In the winter of 2002, I planted 43 plugs supplied by Richard Gill of DOC, Kapiti Area, in various places along the cliffs. A recent survey of these sites shows only six have survived. Although this doesn't sound great, I find it incredible that they survived the crippling drought we had locally last summer. Titahi Bay is much drier than Wellington and has a climate more similar with the Kapiti coast. Apart from a few light showers during April, the rains did not come until the end of June 2003. I will plant more plugs in winter 2004, as I believe it is achievable to increase the survivability of plants in this area and establish a community of plants long term.

Robyn Smith

Melicytus aff. *obovatus* "Coast". Photo: Jeremy Rolfe.

Leptinella nana. Photo: Jeremy Rolfe.

2003/2004 committee

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1 Newsletter Editor

Over the hill

"It's not going to be one of those things they write when someone dies."

Final instructions from a valued colleague before he left and, of course, after he found out that BotSoc wanted to mark his time in the Wairarapa.

So, no, Aalbert—it's not one of those, but you certainly left an imprint and a big set of footprints behind you.

Maybe it's the time for change—not only Aalbert Rebergen, well known for his work with DOC in the Wairarapa and occasional guiding of BotSoc trips on this side of the hill, but Robyn Smith, equally well known for her amazing ability to coax life from the most reluctant of seeds, both striking out for fresh pastures—Aalbert off to Dunedin and the Otago Regional Council and Robyn a shorter distance, to Newtown and the Wellington Zoo.

Both made huge advances in their time at DOC and Percy Reserve, respectively—Robyn could entice a fencepost to put out shoots, and the collection at Percy Reserve is a result of huge effort sustained over a long time.

Plants such as *Sebaea ovata*, *Celmisia philocremna* and the Charleston gentian, that were thought difficult, sprang to life and vigour and in many cases were produced in quantities sufficient for a return to the wild. For many plants the next step after discovery of a new population was getting something to Percy Reserve for Robyn to weave her magic, and when anyone wanted to see an example of even the most obscure plant, the chances were that it was somewhere within reach in one of the glasshouses or in the garden. Many people got an introduction to the true breadth of the NZ flora with Robyn beside them and are the better for it.

Aalbert was also a grower of rare talent—pot after pot in his backyard and many hundreds of rare plants on the hillside at Tinui bear testament to that, but for most of us it was in the field that we got to see him in his element—a great binocular botanist who could spot an *Olearia gardneri* at 50 paces through heavy bush—and did on a couple of occasions, a wealth of knowledge about native fish and Lake Wairarapa's best mate.

I've had great days with both of them and trust that there are more to come—but the day that Aalbert and I came across *Coprosma obconica*, *Olearia gardneri*, *Coprosma pedicellata* and *Pittosporum obcordatum* has to stand out—not so much for the finds themselves, amazing as they were—but later in the afternoon, back at the office in the middle of a meeting whose contents are long forgotten, there was Aalbert miles away with a grin, still enjoying one of those rare days where every terrace and slope held a new discovery.

As expected, his first field trip turned up new Otago records for a couple of threatened species and he was quick to report *Ileostylus micranthus* growing on a neighbouring property

All the best you two, keep in touch, and thanks for everything.

Tony Silbery

Proposed changes to the rules of Wellington Botanical Society Inc.

The Inland Revenue Department have advised that some changes to the rules of the Society are required if the Society is to remain exempt from Income Tax. The changes are designed to ensure that individual members should not benefit from the tax exemption in the event of the winding-up of the Society.

At the General Meeting to be held on 16 February 2004 a formal motion will be made to change Rules 10 and 19. The proposed additions to the rules are shown below in italics with the existing rules shown in ordinary font.

Rule 10

These rules may be repealed, altered or added to by resolution of a General Meeting, provided that written notice of the motion has been given to every member at least two weeks before the date of such meeting, and that three fourths of those members present vote in favour of such alteration.

No addition to or alteration of the charitable objects, rules relating to personal benefits, or the winding up rule shall be approved without the approval of the Inland Revenue Department.

The provisions and effects of this rule shall not be removed from this document and shall be included and implied into any document replacing this document.

Rule 19

Upon the winding-up of the Society, its property shall be disposed of in accordance with the directions given by the concluding General Meeting of the Society, or in the event of a quorum not being obtained at that General Meeting, by the Committee then in office.

If upon winding–up or dissolution of the organisation there remains after the satisfaction of its debts and liabilities any property whatsoever the same shall not be paid or distributed among members of the Society. But shall be given or transferred to some other organisation or body with similar objects to the Society that has an Income Tax exemption or for some other charitable purpose within New Zealand.

Pigeon Bush Reserve

This 1100-ha reserve, on the Rimutaka Range, between SH 2 and the Wellington–Wairarapa railway line, was purchased from the Brandon family by the NZ Native Forests Restoration Trust. The property was known until recently as Rimutaka Restoration Reserve. It is protected in perpetuity by a QE II National Trust Open Space Covenant. Cullers with dogs have recently shot 66 goats and one deer in this wonderful area of mature and regenerating native forest which lies between Rimutaka and Tararua Forest Parks. If you would like to make a donation towards the work of the trust, please send your cheque to NZNFRT, PO Box 80 007, Green Bay, AK 1007. THANK YOU!

As you travel SH 2 on the Featherston side of the summit, look for the signs at either end of that boundary of the property.

David Burson
Honorary Ranger
Ph 04 479 6863

We congratulate Alec "Ben" Thorpe on his nine years of service as a trustee of NZNFRT, culminating in the magnificent achievement of the purchase, in two stages, of Pigeon Bush Reserve. Ben has now retired from the position. Jenny Rattenbury, who has been a trustee since 1990, is now the sole Wellington-based trustee. Contact Jenny at ph 389 6525, e-mail: jennyrat@extra.co.nz

The Committee

QE II Open Space Covenants

The Trust has recently registered the following Open Space Covenants in the Wellington Region:

- Renalls Ltd and A and P Van Barneveld flaxland: near Waingawa – 9.5 ha.
- Delaney and Girdlestone:- primary rimu/tawa-titoki forest, inland from Waikanae – 13 ha.
- Zabell Farms Ltd: beech forest and scrub area, and a kahikatea and wetland area adjoining Forest and Bird's Fensham Reserve – 3.5 ha.
- Keane: landscape and podocarp gully forest near Bideford – 11 ha.
- Joslin and Rowan: coastal modified primary kohekohe forest, Paekakariki.
- McDonald and Corcoran: kanuka-kowhai forest on terrace above the Ruamahanga River – 1.5 ha.
- Te Kairanga Wines: totara – kanuka forest, Longbush Road – 5.2 ha.
- Chapman: totara treeland, Upper Plain Road, Masterton – 1.5 ha.
- Cunningham: harakeke flaxland, raupo reedland and swamp maire – pukatea treeland just north of Waikanae – 1.2 ha.

As at 19 December, the QE II National Trust has protected more than 64,788 ha of private land with 1806 covenants on private land. In the Wellington Region there are 144 covenants over more than 4646 ha.

Tim Park
QE II National Trust
PO Box 3341
Wellington.
Ph 04 472 6626, free-phone 0508 732 878, fax 04 472 5578,
e-mail: qe2@qe2.org.nz web site: www.qe2.org.nz

Koiata Botanical Trust – supporting the understanding of the New Zealand flora

The objectives of the trust are to:

- increase public awareness of New Zealand vegetation and flora
- support one or more New Zealand botanists to undertake research
- help with publication of the research
- encourage interaction with the public through popular publications, lectures and field trips.

History of the trust

- established in 1988 from generous, private donations
- since inception, has provided a part-time stipend to Hugh Wilson, the noted Banks Peninsula botanist, and manager of Hinewai Reserve, Banks Peninsula.

Enclosed with this Newsletter is a pamphlet which gives more information about the trust, and the work of Hugh Wilson which the trust has supported.

The trust is supporting Hugh Wilson's work on the following projects:

- a book on the geological and botanical history, and present-day flora and vegetation of Banks Peninsula
- a contribution of chapters on the vegetation of Banks Peninsula and of the Canterbury mountains to the new edition of Natural History of Canterbury
- monitoring and recording of revegetation of Hinewai Reserve as former farm land returns to native bush.

PLEASE HELP THE KOIATA BOTANICAL TRUST!

The trust depends on interest earned from investments made from donations. Your donation would increase the activities and security of the trust. If its income allows, the trust would like to employ more botanists.

BotSoc urges readers to support the trust. Single or annual donations or bequests are welcome.

If you would like to make a donation to the trust, please send your cheque, and your name, address and phone number to:

Mr. C A Hooker, Secretary, Koiata Botanical Trust, PO Box 4415, Christchurch.

The Koiata Botanical Trust is registered as a charitable trust, so donations are tax deductible.

Mana Island planting milestone

The first stage of the revegetation of Mana, one of the biggest operations of its type in NZ, was completed last winter, after eighteen years of work by thousands of volunteers. The initial planting of the area to be reforested is now finished. The next stage will be inter-planting amongst the established pioneer species. Approximately 375,000 plants have been planted to cover about 70 ha, about one-third of the area of the island.

Friends of Mana Island Inc. Newsletter No. 18.
Box 54 101, Mana

Kelburn Tunnel portal planting

There has been enough rain this Spring to assist the ti kouka and flax plants to establish on these steep slopes. It was good to see some kowhai, *Sophora microphylla* put in this time, but regrettably, in a later Council planting, a species which is not native to Wellington, *Pseudopanax lessonii*, was used.

EVENING MEETINGS

20 October 2003. Victoria Froude: Out of sight and out of mind—our disappearing indigenous freshwater plant communities

Underwater indigenous plant communities in lakes are very much out of sight except to scuba divers and snorkellers. This means that few people are aware of the changes that have occurred since European settlement, and are continuing today.

New Zealand has between 770 and 1100 lakes, depending on what minimum lake size is used. There are many different types of lakes, each with their own characteristics and natural patterns of indigenous plantcommunities. The natural patterns of plant communities in our lakes have been severely degraded, or lost completely.

The one hundred Waikato shallow lakes provide a disturbing case study of the stages of lake-decline. In the 1870s, botanists reported a great diversity of native plants and clear water. Today, only one lake, Serpentine North, remains free of alien plant and fish species, although its water quality has declined. The other lakes demonstrate the following stages of decline:

- Progressive decline of water clarity caused by catchment land use changes, and removal of lake margin vegetation
- Extensive, and often total, invasion by submerged alien plant species
- Decline, and eventual loss, of all submerged vegetation caused by deteriorating water quality, and pest fish such as rudd, tench, catfish and koi carp.

An important step in arresting the decline of the remaining submerged indigenous plant communities in NZ lakes is the regular monitoring of their condition. This has not happened, partly because previous methods have been expensive, and required high levels of plant identification skills. To overcome this, NIWA and Pacific Eco-Logic have recently developed a simple method for monitoring lake ecological condition. This includes field and analysis methods to give three indices for each lake measured: native condition; invasive condition; LakeSPI. Each index can be scaled to be expressed as a percentage of the maximum score that is possible for that lake in an un-impacted condition. Regular measurements will allow trends to be detected for each lake measured. A LakeSPI web-based database is being developed by NIWA

The provision of timely information on lake condition is the first step in halting the decline in submerged lake plant communities. This should be followed by appropriate and timely action from management agencies and the community.

Vicky Froude
Pacific-Eco-Logic

17 November 2003

We had three speakers at this meeting. The first two were Daniel Rogerson and Annalise Bolger, joint winners of BotSoc's Award at the NIWA Wellington Science and Technology Fair.

1. Daniel Rogerson (11 years): How acidity affects native plant growth

Daniel tested five plants of each of three species for nineteen days. He numbered them, measured their height, and placed them in a sunny position. Each plant received the same amount of solution (50 ml), sunshine, rain, and shelter from the wind. Plants requiring vinegar were given the exact amount of vinegar in one of five chosen concentrations.

His hypothesis was that soil acidity would affect the growth of native plants, and that when plants are watered with 30% and 100% vinegar, resulting in soil with a pH of 5 or less, they would be affected in a similar way to those plants in areas which experience acid rain, which also has a pH of 5 or less. He expected that some plants would lose their leaves, some leaves would change colour, and some leaves would crumple.

Among the problems Daniel faced were: the plants were not all the same height; the experiment was not long enough; pH paper is not as accurate as a pH meter; uncertainty over whether vinegar and water would act like acid rain.

Daniel concluded that for:

Purple akeake – his hypothesis was incorrect, because the plant which was watered with 25% vinegar was also affected, as well as the plants treated with 30% and 100% vinegar.

Kohuhu – his hypothesis was correct, because the plants treated with 30% and 100% vinegar were affected, the former losing all its leaves, and the latter having most of its leaves turn brown.

Pseudopanax hybrids – his hypothesis was incorrect, because three plants were affected. The plant treated with 25% vinegar had its leaves blacken and become flimsy; the plant treated with 100% vinegar had its leaves turn brown from the inside, and shrink considerably

Daniel believes that all this happened because of all the reasons identified in his hypothesis and research in his logbook. He believes that the reason that the 25% vinegar-fed plant was affected was because it was treated with a similar pH solution to the 30% vinegar-fed plant,

"Assuming vinegar is a good replica of acid rain, I can sum up by saying that the native plants I have tested are more sensitive to vinegar than I thought", said Daniel.

Editor: from Daniel's report .

2. Annalise Bolger (11 years): Which native tree out of the six chosen burns or smothers fire the slowest? Is it the ones with lots of leaves, or the ones with hardly any? Some trees have small leaves and some have big leaves

Annalise's hypothesis was that trees with not many leaves will burn more slowly, and that **kawakawa** would burn the slowest. Then she changed her mind, thinking that **karaka** looked more resistant to fire because of its glossy leaves. She predicted that **mahoe/ whiteywood** would burn the fastest, because it is used in the friction method of fire-lighting.

Annalise asked "Will my question be which tree burns out the fastest, or which tree smothers the fire the fastest? She decided that they are related, so sought to answer both.

The purpose of the investigation was to find the slowest burning, or fastest smothering trees, which could be used in fire-prone areas to lower the risk of house fires. "I am using native trees because the council and the public are trying to get rid of all non-native trees. Native trees would also be more environmentally-friendly".

Method

1. "I got a native tree book out of the library and identified six trees around my house.
2. I got a 40 gram sample of each tree.
3. I covered a tray with tin foil. I was ready to start burning the trees.
4. I burnt the trees in turn. I took photos and timed how long it took for the fire to stop burning.
5. I wrapped the remains of the samples in newspaper in case I needed to use them again."

The trees took the following times to stop burning:

- rangiora – 3:07 min
- titoki – 2:47 min
- mahoe – 2:17 min
- kowhai – 1:59 min
- kawakawa –1:35 min
- karaka – 0:59 min

Annalise believes the reason the karaka stopped burning so quickly is because the big, glossy leaves smothered the fire, so it should be good for planting around houses and in fire-prone areas. Rangiora and titoki ignited easily, so it would not be wise to plant them in fire-prone areas

"This information could be used by people building houses near bush, or with trees in the backyard. The council could use the information if they are planning to plant some native trees" said Annalise. "I have learnt that none of the trees I tested will burn without there already being a fire, and I found out the names of lots of native trees", she said.

Editor: from Annalise's report

3. Deidre Burke: Onslow College Arboretum

An almost continuous, natural, native corridor runs through Otari, Kaiwharawhara Valley, along Te Wharangi Ridge (Skyline Track) to Mount Kaukau and down to Onslow College. As an extension of this, Onslow College is developing 0.5 ha of land above its Burma Road boundary, into a native bush arboretum. (Note: The Concise Oxford Dictionary defines an arboretum as "a botanical tree garden". Ed.) It will become another feeding and breeding ground for our endangered native birds and and a valuable learning and recreational area for our students and the wider community.

We have removed inorganic rubbish and weeds, felled pines, and cut the main, circular track. Each year-nine class will be involved in an arboretum project through to 2005, when we reach the end of Stage One and the college celebrates its 50th anniversary. We are now planning pathways, lookouts, general plant layout and special plant collections such as New Zealand alpine plants.

We were delighted to receive Arnold and Gavin Dench's offer of help to create a native alpine garden and we look forward to working with and learning from Arnold during the process of planning and installing it.

This is a model of a cooperative project focused on young people caring for their environment. Students and staff work for a common cause. Teaching staff cooperate with with support staff, parents, former staff, former pupils, community groups and local businesses. By mid-December you should be able to access the Enviroschools and Arboretum pages within the Onslow College website, giving you background information, maps, Olaf John's weed and native plant species survey, articles about student project work and our work schedule for 2004. www.onslow@school.nz/arboretum.html.

Abridged from an article by Deidre Burke, Landscape Planner.√

Matiu Matters

The 2003 restoration planting ended in October with 5763 locally sourced indigenous trees put in by four group plantings and by the fortnightly working team. DOC has installed a spray irrigation system on the eastern side of the Quarantine Paddock where most of the plants went. This should ensure their survival through the dry summer months. In addition, sucessional species were planted within the established forest where light wells had opened up. Future plantings will increasingly be in these sheltered areas now that most open areas have been filled with pioneer plants. DOC workers have done much planting in less accessible sites with plants obtained from outside sources and from Forest and Bird nurseries.

There are plans to establish a collection of regionally threatened plants beside the Forest and Bird house. Waiting in the nurseries are: *Euphorbia glauca*, *Discaria toumatou*, *Rumex neglectus*, *Acaena pallida*, *Rubus squarrosus*, *Tetragonia tetragonioides*, *Muehlenbeckia astonii* and *Clematis afoliata*. *Streblus banksii* is now established to 2.5 metres high. Work is underway to remove karo/*Pittosporum crassifolium*. Many young seedlings are found among the established trees and these are being removed. It is some years since BotSoc visited Matiu/Somes Island to make a species list and to attack weed pests. Perhaps it is time to make another foray?

Stan Butcher.

TRIP REPORTS

1 November 2003: Carey Gully, Owhiro Stream catchment

In fine weather a staunch group of thirteen braved the nettles in this regenerating Wellington south ecosystem in a tributary gully of "Owhiro Stream". After descending steeply through low, mahoe/rangiora dominant scrub, later under a 10-metre canopy of mahoe we admired hundreds of *Astelia fragrans* and further down, a wet rock face with a thick pelt of *Trichomanes endlicherianum*. Common Wellington ferns were abundant, and the less common "crinkly fern" *Hymenophyllum flexuosum* was not uncommon streamside. Here Leon helped us sort out the characteristics of *Asplenium gracillimum* which distinguish it from *A. bulbiferum.*

After scroggin under a large porokaiwhiri at the forks, we began to climb the main stem through an area of devastation resulting from a large, recent slip. In places the stream bed was completely buried under tonnes of soil, possibly the result of the sidling road above, bulldozed last year by Council. Further upstream we added C*ordyline banksii* and looked for the "Hoheria Tararua" which we had found as a sapling 10 years ago. That tree has gone but thankfully its progeny, a goat-browsed seedling and sapling are growing. A small terrace later yielded sweetly scented *Clematis forsteri*, *Botrychium biforme*, *Asplenium colensoi*, *Pterostylis banksii*, *Plantago raoulii*. Here Leon familiarised us with characteristics of the newly separated *Polystichum neozelandicum* and *P. oculatum*.

Climbing out via a steep spur in a gale northerly we saw *Hymenophyllum minimum* and *Blechnum procerum*. Seedling kamahi bodes well for the future of this extensive ecosystem if it is allowed to continue to regenerate towards replacing its original forest cover. We hope that after all, there will be no need to fill Carey Gully to the 260 m contour with Wellington's "rubbish".

So do your bit—reduce, re-use, recycle…

Participants: Barry Dent, Rewi Elliot, Sue Freitag, Bryan Halliday, Chris Horne (Co-leader), Chris Hopkins, Gary James, Gordon and Sheelagh Leary, Barbara Mitcalfe (Co-leader), Mick Parsons, Leon Perrie, Darea Sherratt.

Barbara Mitcalfe

22 November 2003: Arnold and Ruth Dench's garden, Newlands

Arnold and Ruth invited BotSoccers to an open day at their garden, to see a wide range of New Zealand plants, including some endemic species, and some from remote parts of the NZ Botanical Region. They organised a competition for people wishing to test, or further, their botanical knowledge, The prize was derived from *Vitis vinifera*.

We thank Arnold and Ruth for their hospitality, including hot drinks made from *Camellia sinensis* and *Coffea arabica*, and congratulate them on turning an unpromising property into a garden which is surely of national significance. They have spent forty years learning about native plants and their growth requirements, and encouraging people to plant them

Partcipants: Jill Broom, Eleanor Burton, Barbara Clark, Arnold Dench, Gavin Dench, Ruth Dench, Barry Dent, Helen Druce, Chris Horne, Gordon Leary, Sheelagh Leary, Rodney Lewington, Barbara Mitcalfe, Donella Moss, Mick Parsons, Cynthia Peterson, Darea Sherratt, Sunita Singh, Robyn Smith, Joyce Wilson and Pru .

Chris Horne

6–7 December 2003: "Beauley" – Mangapakeha Taipo, Wairarapa

We used a species list abstracted by Pat Enright from an A P Druce 1972 list of Wairarapa taipos, updated by Enright, Kirby and Palmer in 2001, and Enright and Bichan in November 2003. On Saturday we entered a gully where under podocarp/broadleaf forest we found *Adiantum diaphanum*, *Asplenium gracillimum*, and after several careful inspections, confirmed *Metrosideros colensoi* as well as *M. diffusa*. As we climbed the steep, greywacke slopes on unstable talus, we noted the absence of tree ferns and the predominance of species that are characteristic of the warm, dry conditions in Wairarapa, e.g. kanuka, tawa, titoki and matai. Ngaio was noticeably common throughout, and there were some impressive pukatea streamside. On top for scroggin, we had wide-ranging views followed by a steep descent, noting *Cheilanthes humilis* on sun-baked rocks and several flowering *Brachyglottis greyi*, *Arthropodium candidum*, *Galium propinquum*, *Clematis paniculata*, *Freycinetia baueriana*, *Rytidosperma gracile*, *Corybas trilobus*, *Asplenium colensoi*, *Ctenopteris heterophyllus*, *Cyathea dealbata*, *C. medullaris*, *Hymenophyllum sanguinolentum*, *Pneumatopteris pennigera*, *Streblus heterophyllus* were additions on the day.

On Sunday we climbed the taipo by another route, after inspecting *Doodia australis* (= *media*) in a gully. Later we saw two tiny plants of the BotSoc logo fern, *Anogramma leptophylla*, and *Corybas trilobus* (both additions) in a damp spot, and nearby, was a profusion of *Craspedia uniflora* var. *grandis* in flower. Sweating profusely in the heat, we struggled steeply up through a remarkable entanglement of wiry *Helichrysum aggregatum* to the bush edge where Emil found *Pomaderris phylicifolia*.

We thank Len and Chrissy for permission to botanise, for use of their vehicle, and for comfortable shearers' quarters. We also thank Aiden Bichan, QEII National Trust Regional Representative, for devoting two days to guiding us.

Participants: Beth Andrews, Aiden and Helen Bichan, Co-leaders Geoff and Jenny Doring, Brian Halliday, Dave Holey, Chris Hopkins, Chris Horne, Rodney Lewington, Barbara Mitcalfe, Emil Schmieg, Darea Sherrat.

Barbara Mitcalfe

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