Wellington Botanical Society

Te Rōpū Manāki i Ngā Tamariki a Tāne, o Te Whanganui a Tara

NEWSLETTER September 2018

Previous issue: May 2018

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From the past-president

August sees the end of my term as Wellington Botanical Society president. The society has a presidency limit of two years, enabling new ideas to come in with each new president. I have thoroughly enjoyed my term, and will be moving to the position of WBS secretary. I would like to welcome our new president, Jon Terry, and our new committee member, Julia Stace. I look forward to working with you both.

A registration form for our Summer Camp is in this newsletter. Please book early to avoid disappointment, and to help Mick and me with our planning.

Lara Shepherd

From the president

Kia ora.

On 20 August it was my great pleasure to take on the role of Wellington Botanical Society president. We were also charmed with a wonderful lecture by Prof. Bruce Clarkson on the subject of plant hybrids.

Growing up near Eketahuna on the banks of the Mangatainoka River, I took an early botanical interest by growing kōwhai and oak trees from seed. Later I completed an honours degree in plant ecology. Since then I have mostly worked for the Department of Conservation on native plants and exotic weeds. Lately, I've been fascinated with lichens and wetland plants.

Jon Terry, President

New members

We welcome the following: Wilbur Dovey, Frances Herrington, Andy McKay, Maya Hunt and Terese McLeod.

Lea Robertson, Treasurer

Wellington Botanical Society

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Send your subscription to Treasurer, WBS, Box 10 412, Wellington 6143 or to our bank account 020536 0017812 00.

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

Articles for web site

We welcome articles for consideration for inclusion on our web site:

www.wellingtonbotsoc.org.nz

Please send your article to:

Richard Herbert

e-mail herbert.r@xtra.co.nz

Writing for the Bulletin

Do you have a botanical observation, anecdote, or insight that you could share with others in BotSoc? If so, please consider contributing it to the Wellington Botanical Society Bulletin. There is still plenty of space in the next issue. For more details and assistance, contact Eleanor Burton at esmereldadoris93@gmail.com or 479 0497.

Meetings

BotSoc meetings are usually held at 7.30 p.m. on the third Monday of each month at Victoria University, W'gton – Lecture Theatre MYLT101, ground floor, Murphy Building, west side of Kelburn Parade. Enter building about 20 m down Kelburn Pde from pedestrian overbridge. No meetings December and January.

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, at Easter and the first weekend in December.

DEADLINE FOR COPY FOR NEXT ISSUE – 20 November 2018

Articles may be edited for clarity and length

ATTENDING FIELD TRIPS AND MEETINGS

Ideas please

We welcome your ideas about:

- places to visit on field trips, and potential leaders of those field trips.
- topics and speakers for evening meetings

Please send your ideas to Barbara Clark, PO Box 10 412, Wellington 6143, ph 233 8202.

Field trips—single day

A field trip, usually lasting 4-5 hours, is an opportunity to learn how to identify native plants and adventive plants (weeds). During the trip, experienced participants record the species seen. After it, a new or updated plant list will be produced for the site. This list will be published on the NZ Plant Conservation Network web site, and copies sent to trip participants, landowners and managers.

If you intend to join a field trip, PLEASE phone or e-mail the leader at least TWO DAYS beforehand, so that he / she can tell you of any changes and / or particular requirements. If you cannot ring or e-mail in advance, you are welcome to join on the day. If you e-mail your intention, the leader will send you a copy of the draft plant list, so that you can print it out to bring with you. If you do not have a printer, tell the leader. At the meeting place, the trip leader will ask you to write on the registration form your name, e-mail address (so that you can receive the updated plant list), and a phone number for the leader to ring your next-of-kin in an emergency.

What bring—clothing

Choose from the following items, according to the weather forecast, and your personal needs: sun hat, woollen or polyprop beanie or balaclava, waterproof / windproof raincoat (parka) and over-trousers, long-sleeved cotton shirt*, singlet*, thermal or woollen top, woollen jersey or fleece jacket, nylon shorts or trousers*, polyprop long-johns, underclothes, thick socks, boots or walking shoes, gloves / mittens.

*Note: In wet, cold weather, do not wear cotton shirts, singlets, t-shirts and trousers.

What to bring—gear and food

Day pack with lunch, biscuits or scroggin, hot or cold drink, spare clothing, personal first-aid kit, note-book, pen, pencil, cell-phone, wallet. Optional: walking pole, clip-board, map or park brochure, camera, binoculars, hand-lens, sun-block, sun-glasses, insect repellent, whistle, toilet paper.

Field trips—overnight

Field trips usually last two days; at Easter, three days. We may be based at a camp-ground with or without cabins, or a rented house, or a private bach. The field trip may last 4-7 hours each day.

Overnight trip gear and food

Add to the day-trip gear, food and drink listed above: breakfast, fresh fruit, torch, spare bulb and batteries, candle, mug, plate, knife, fork, spoon, small towel, soap, tooth brush. If accommodation is not provided for, bring tent, fly, poles and pegs, groundsheet, sleeping mat, sleeping bag, sleeping-bag liner and stuff bag. Optional: matches in waterproof container, water purification tablets, pocket knife, large plastic survival bag to line pack, gaiters. Note: dinners may be 'pot-luck'—ask the leader to suggest what your contribution might be.

Summer camps

These field trips last 7–10 days. Full details will appear in the newsletter.

Health and safety

The leader will bring BotSoc's comprehensive first-aid kit, a topographic map, a cell-phone, and give a health and safety briefing.

The leader will describe the route, and approximate times for lunch, tea breaks and the end of the trip.

Bring your own first-aid kit. If you have an allergy or medical condition, bring your own anti-histamines and medications, tell the leader of any problems you may have, and how to deal with them.

Before the trip, if you have any doubts about your ability to keep up with the party, discuss this with the trip leader, who has the right to restrict attendance.

If you decide to leave a trip early, you must tell the leader, and be confident that you know your way back to the start. Enter your name on the 'register' under a wind-screen wiper on the leader's car, or other agreed place, to record your safe return.

Fitness and experience

Our field trips are mostly on established tracks, and at a leisurely pace, but 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, you participate at your own risk.

Transport

When the use of public transport is practical, details will appear in the newsletter.

We encourage the pooling of cars for trips. If you need a lift, tell the trip leader.

Passengers: Pay your driver your share of the running costs. We suggest 10c per km / passenger. If a trip uses the inter-island ferry, pay your share of the ferry fare. If you change cars mid-trip, leave a written note for your driver, under a wind-screen wiper on her or his car, and check that your new driver adds you to her or his list.

Drivers: Ensure that you know the route to the start of the trip, and that you have a written list of your passengers. Zero the odometer at the start, and agree on a return time. Check from your list that all your passengers are in the car. Collect contributions towards transport costs.

Trip leaders

Draft a trip report for the newsletter, including a list of participants, and send it to the editor.

Other matters

If after your first BotSoc field trip, tell the leader if you think there is information newcomers would appreciate seeing about future trips, in the newsletter, on the web site, or on Wellington Glean Report.

If you would like to offer to lead a field trip, or be a deputy leader on a field trip, contact our programme organiser, Sunita Singh, sunita@actrix.co.nz

Meetings

Public transport to meetings

The following bus services stop on Kelburn Parade, about 50 m up it from Victoria University's Murphy Building Lecture Theatre MYLT101:

TO MEETINGS

No. 22 Mairangi from WN Station 7.00 p.m.

No. 22 Wellington Station from Mairangi 7.00 p.m.

No. 21 Wrights Hill from Courtenay Place 7.00 p.m.

No. 21 Courtenay Place from Karori Mall/Beachamp Street 7.01 p.m.

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

FROM MEETINGS

No. 22 Wellington Station 9.13 p.m., 10.13 p.m.

No. 21 Courtenay Place 9.13 p.m., 10.13 p.m.

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

Further information from Metlink
Phone: 0800 801-700
Web: metlink.org.nz
E-mail: info@metlink.org.nz
Or use the Metlink app available free for Apple and Android devices.

FIELD TRIPS & EVENING MEETINGS: OCTOBER 2018 – FEBRUARY 2019

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 weekend trips, and SEVERAL WEEKS' notice before the New Year's trip.
Non-members are welcome to come to our meetings and to join us on our field trips.

Saturday 6 October: Field trip **Mt Maunganui, Akatarawa Forest**

Beyond Maungakotukutuku Stream, the track crosses young then old river terraces with tawa and podocarp spp. before starting to climb the spur. The ascent to Maunganui takes c. 3 hours. Return same way, so you can botanise in groups as far as you please up the spur to the summit. As you climb, you pass tawa-broadleaf forest which becomes more dominated by cool-loving species such as kāmahi and miro. The summit is dominated by alpine scrub: dominant genera—*Gaultheria*, *Chionochloa*, *Dracophyllum*, *Olearia* and *Weinmannia*. Botanise open wind-leads and occasional turfs, and enjoy the panoramic view. Let's aim to have lunch on the summit, then botanise as we descend. **Meet**: 9.45 a.m. at the end of the tar seal on Maungakotukutuku Rd. **Drive to Paraparaumu on old SH1**: cross over railway at traffic lights. Follow main road south through suburbs past substation. Maungakotukutuku Rd is signposted on left. **Train**: Kāpiti Line train ex WN Station 8.14 a.m. to Paekākāriki. Ask Owen to meet you in station car park at 9 a.m. **Map**: NZTopo50-BP32 Paraparaumu. **Leader**: Owen Spearpoint: 027 285 8083 / 830 4418 (w); home: 562 8780 (h).

Monday 15 October: Evening meeting **WCC, student & other presentations**

1. *Outer Green Belt Management Plan review*. Bec Ramsay, Manager Open Space & Recreation Planning, Parks, Sport & Recreation, WCC. Council staff working on the review thank BotSoc for its earlier input and continuing involvement. Bec will summarise the key changes proposed for the draft plan, then discuss formal consultation dates and process.
2. NIWA Science Fair co-winners: Thomas Fraser, Year 7, Wadestown School: *Rongoā Māori-Native Plants: and investigation of how native NZ plants had medicinal purposes in the Māori culture.* Louis Holland, Year 8, Wadestown School*: Can a native plant be an effective insulator?*
3. Matt Biddick, PhD researcher: *Life often evolves in repeated and predictable ways on isolated islands*, although relatively little is known about generalities in the evolution of island plants. My research on Mayor Island (Tūhua), shows how the same ecological mechanisms that drive size changes in insular animals may also operate in the evolution of insular plants.
4. *How to be sluggish*. Dr Dave Burton: Slugs are snails that have evolutionarily lost their shell. This means that

they can no longer withdraw into their shells to escape desiccation; it also means that they have to cram all their organ systems into the foot, in a process called compaction. NZ slugs have taken this process to an extreme not seen in any other land mollusc, and have become the flattest slugs in the world as a result. They are unique.

Saturday 3 November: Field Trip **Coastal and estuarine vegetation**

An easy walk botanising coastal forest along the Camborne Walkway, and salt-marsh along Te Ara Piko Pathway. Once we have botanised the Camborne Walkway, we will have morning tea while cars and people are moved to Motukaraka Point, and at least one car is moved to Pāuatahanui, the end of our trip.

We will then botanise along the Te Ara Piko boardwalk from Motukaraka Point to Pāuatahanui. This path crosses Horokiri Stream, once the subject of a detailed trout study—it now provides habitat for numerous native species of freshwater fish. Note that Te Aro Piko Pathway is very exposed if it is windy and the final stretch of the walk is beside Grays Rd. Bring binoculars for bird-watching. There is no public transport from Pāuatahanui so ride-shares will need to be arranged for going home. Phone me if you can offer/need rides on return trip. **Brochure**: *Walking & cycling tracks in Porirua City*. (PCC). **Trains**: Kāpiti Line train from W'gton Station 8.14 a.m. to Mana Station, or 8 a.m. train from Waikanae Station. **Meet**: 9 a.m. at the end of Pascoe Ave, Mana, off SH1. We'll ask some drivers to shuttle some cars to car park at other end (Grays Road) before we start. **Map**: NZTopo50-BP32 Paraparaumu. **Leader**: Frances Forsyth 021 072 5210.

Monday 19 November: Evening meeting **Toropapa (*Alseuosmia*)—NZ's most confusing plant genus**

Speaker: Lara Shepherd, Research Scientist, Te Papa. Toropapa (*Alseuosmia*) has been confusing botanists for over 100 years because some of its currently recognised species have extremely variable leaf shape. To make identification of them even more difficult the leaves of some toropapa species resemble completely unrelated species. Lara will discuss her research into the taxonomy and evolution of this fascinating group of shrubs.

Saturday 1 December: Field trip **Saline wetlands, Wairarapa**

We are returning to these saline wetlands hoping to see more species in flower than we saw on our 7.10.2017 visit. We will look for species that had not emerged before our last vist, e.g., orchids, annuals and biennials (See May 2018 newsletter, pp 12, 13). The small wetland, protected by an impressive fence to exclude ungulates, is surrounded by rank pasture and a pine plantation, with some regenerating scrub nearby. It is one of the few examples of non-geothermal tectonic activity found on earth. It looks like Rotorua but without the heat. The vents are extremely saline and have almost no vegetation. Beyond the vents, the saline turf species are the same as those found on the coast. There is no cell-phone coverage at the wetland, but some on a high point nearby. The site is at about 500 m elevation, so bring warm clothing, hat, gloves, leggings and a parka. **Meet:** 9 a.m in Gladstone in the lay-by on the left just north of village. We will then drive in convoy to the corner of Te Wharau & Craigie Lea roads. From here it is 5 minutes to Craigie Lea forest through the farm. The forestry road is good, but problematic if very wet. It is suitable for most 4WD vehicles with good tyres and clearance. A maximum of 6 vehicles—GWRC will take up to three vehicles. **4WD vehicles sought:** Please tell Owen if you have a 4WD and would like to help ferry people to the site. **Hi-viz:** Bring a hi-viz vest if you have one, and if you don't, please tell Owen—this is a health and safety requirement insisted on by the forest owners. We will leave the site for home at 3 p.m. We will, for safety, return to the tar seal road in convoy. Map: NZTopo50-BQ35 Te Wharau. Leader: Owen Spearpoint ph 027 285 8083, 830 4418 (w); home: 562 8780 (h). e-mail: Owen.Spearpoint@gw.govt.nz

25 January – 1 February 2019: Summer Camp **Bannockburn, Central Otago**

Botanise Otago's valleys and block mountains with their fascinating floras and landforms. Please see the registration form at the end of this newsletter. Please send your completed form and deposit to BotSoc on, or by, **20 November**—the last BotSoc meeting of the year. If paying by cheque: please make it out to Wellington Botanical Society and send it with the completed Registration Form to Lara Shepherd, 26 Thane Rd, Roseneath, Wellington 6021.

Maps: NZTopo50 CB11 Arrowtown, CB12 Cardrona, CB13 Tarras, CC11 Queenstown, CC12 Bannockburn; CC13 Alexandra, CD11 Kingston, CD CD12 Piano Flat, CD13 Roxburgh,

Transport to Queenstown: Aircraft, or bus. **Arrive by 1.35 p.m. latest**.

Transport to Bannockburn Camp from Queenstown Airport: Shared rental van, (or private car if one is not going direct to Bannockburn Camp).

Co-leaders: Lara Shepherd lara.shepherd@tepapa.govt.nz; Mick Parsons 027 249 9663, parsonsroad@gmail.com

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

AWARDS

- *5 October*. **NZ Plant Conservation Network annual awards.** Categories: Individual; School; Council; Community; Plant Nursery; Young Plant Conservationist of the Year (under 18 years at 30.6.2018). Nomination form from www.nzpcn.org.nz

EVENTS

- *1st Saturday each month*. **Otari-Wilton's Bush Plant Care.** No. 14 Wilton bus to Warwick St stop.
  Wilbur Dovey 499 1044.
- *3 September 2018 to November 2019*. **Wellington Botanic Garden – celebrating 150 years.** Extensive programme of events. Contact Tree-House, Wellington City Council, ph 499 1400. No. 2 Karori bus or Cable Car.
- *12– 26* September*. **Exhibition of native plant artworks.** By Eleanor Burton: pen & ink drawings and colour-pencil drawings; and by Sue Wickison: water-colour paintings. *To check closing date, contact Wellington Botanic Garden Tree-House 499 1400. Glenmore St, WN. No. 2 Karori bus.
- *14–23 September*. **Display of concepts for changes to the nursery at Otari-Wilton's Bush.** Mezzanine floor, W'gton Central Library building, near Clark's Café. Vote for your favourite!
- *15–23 September*. **Conservation Week.** Theme: "Conservation Week is Calling". For information on events and activities in your area: www.conservationweek.org.nz

- *21–30 September*. **Great kererū count.**
- *22 September, 10 a.m. – 2 p.m.* Otari Native Botanic Garden – Open Day. 160 Wilton Rd, Wilton, WN. Native plant sales, guided walks, displays, stalls. No. 14 Wilton bus to last stop in Gloucester St.
- *26–28 September*. **NZ Wetland Restoration Symposium.** Theme: *Living wetlands in the living landscape*. Napier War Memorial Conference Centre. Fully booked.
- 8–13 November. **John Child Bryophyte & Lichen Workshop, Pureora.** Workshop is open to anyone interested in NZ's mosses, liverworts and lichens. Contact: Thomas Emmitt, temmitt@doc.govt.nz & Dhahara Ranatunga, dranatunga@aucklandmuseum.com
  www.pureoraforestlodge.org.nz/facilities.html
  Pureora is 5 hr from WN, 3.5 hr from AK.
  Costs: Accommodation at Pureora Forest llodge kindly provided free by DOC. Food: c. $25–$45/person/day—$20–$30 for dinners, $5–$15 for breakfast/lunch.
  Tom Moss Award: This award is open to any student studying any aspect of Australasian bryophytes and/or lichens. See http://www.wellingtonbotsoc.org.nz/awards/moss.html for details.
- *12–16 November*. **12th Australian Plant Conservation Conference.** Canberra.
  www.anpc.asn.au/conferences/2018
- *25–29 November*. **NZ Ecological Society conference, Victoria University, W'gton.** https://www.confer.nz/nzes2018/.
  Organisers: Conference & Events Ltd, Nelson. No. 22 Mairangi bus from WN Station, no. 21 Wrights Hill bus from Courtenay Place.

PUBLICATIONS

1a. Forever Protected - 40 years of the QEII National Trust. Shona McCahon. 2017. A5, soft cover, 120 pp, colour and black & white photos, maps.

1b. Open Space. 94 5/18: New logo and web site; defending protected Coromandel land at the Supreme Court; nature recovering in 53,000-ha Mahu Whenua covenants; searching for *Pittosporum obcordatum*; IUCN workshop on guidelines for conservation on private land; dog used to detect rodents; advising landowners how to protect their land; Mt Hamilton-McKenzie Covenant, Southland; Waikato Regional Rep's work; Celia Stephenson 1925–2017; etc.

- *QEII National Trust, Box 3341, WN, 6140. www.qeiinationaltrust.org.nz*

2a. What's new in biological control of weeds? A4 8 p.

2b. Biocontrol agents for weeds in NZ—quick reference brochure.

- *www.landcareresearch.co.nz/research/biocons/weeds/*

3. Trilepidea. 174 5/18: Farmer sued over native plant destruction; *Kunzea tenuicaulis*; Royal Society Te Apārangi 2018 Leonard Cockayne Lecture—"Ornamental to Detrimental"; plants along track to Cape Brett lighthouse; Unitec Herbarium; NZ Lichens by Bill & Nancy Malcolm (2018 revision)—review; etc. 175 6/18: Latest review of the threat status of NZ's indigenous flora; *Pachycladon crenatum*; seed banking Myrtaceae on Aotea/Great Barrier Island; name of *Oxybasis* in NZ changed; kauri dieback; new species: *Pittosporum roimata* from Poor Knights Islands; etc. 176 7/18: Kauri dieback-research into how native plants impact zoospore spread; *Carmichaelia juncea*; NZPCN annual awards; myrtle rust response in Australia; Global Partnership for Plant Conservation; etc. 177 8/18: NZ Indigenous Flora Seed Bank—myrtle rust response—banking Myrtaceae seeds; *Astelia nivicola* var. *moriceae*; conserving seeds to fight plant extinction; NZ flora overseas; Dr Geoff Park's *Nga Uruora* reprinted; Whanganui Regional Museum Botanical Group Golden Anniversary; etc.

- *NZ Plant Conservation Network. events@nzpcn.org.nz*

4a. NZ Botanical Society Newsletter. 132 6/18: *Brachyglottis hectori*, regional botanical societies' news; John Child Bryophyte & Lichen Workshop, Pureora, 11/18; UNITEC Herbarium; John Donald Lovis 1930–2017; David Landsborough (1779–1854)—biographical sketch; book review—*NZ Lichens*. Bill & Nancy Malcolm. 133 9/18: *Leptinella pyrethrifolia*; Dr Ilse Breitwieser awarded 2018 Allan Mere; regional botsocs' news; 50,000 accessions at Auckland Museum herbarium; Prof. Emeritus John R. Flenley 1936–2018; biographical sketch Kenneth Willway Allison (1894–1976).

4b. Many back issues of NZBS newsletter can be downloaded from www.nzbotanicalsociety.org.nz/newsletter/newsletters.html

- *NZBS, c/- Canterbury Museum, Rolleston Ave, CH 8013, www.nzbotanicalsociety.org.nz*

5a. Auckland Botanical Society. Newssheet. 6/18: kauri dieback – letter & maps from Dr Mels Barton; etc. 7/18: "Forest has the Blues" project; etc. 8/18: *Pinus novaezelandiae*; Aroha Kauri Day 21.6.19; 9/18: "One of our generation's big challenges -The indigenous revegetation of NZ" Lucy Cranwell Lecture by Willie Shaw; Oratia Native Plant Nursery closes; update on monocot macrofossil data from NZ & Australia; Forest & Bird closes reserves with kauri; University of Auckland's NZ Plants web site www.nzplants.auckland.ac.nz/en.html

5b. Auckland Botanical Society. Journal Vol. 73(1) 6/18: field trips; articles on plant communities; why *Coprosma* spp are attractive to browsing animals—caffeine content; water pennywort/*Hydrocotyle umbellata* naturalised in an Auckland reserve; South African daisy genus invading beaches; etc.

- *ABS, Box 26391, Epsom. AK 1344. https://sites.google.com/site/aucklandotanicalsociety/*

6. Canterbury Botanical Society. Journal 48 2017. Articles of particular interest: Grabbing the tiger by the tail/Nicholas Head; Restoration planting-Are we saving or sabotaging our precious native remnants?/Miles Giller; Ecological restoration and the role of eco-sourcing/Jason Butt. finds on Canterbury Plains; creating wetlands; revegetation project; planting *Pyrrosia eleagnifolia* as an epiphyte; CH BotGdn experiments with mistletoe/*Ileostylus micranthus*; monitoring *Myosotis lytteltonensis*; Sawpit Ck flora; 64th annual report; etc.

- *CBS, Box 8212, CH 8440. info@canterburybotanicalsociety.org.nz http:/canterburybotanicalsociety.org.nz/*

7. Nelson Botanical Society. 8/18: Field trips incl. Ara Whenua/Fiordlands & Glen Covenant; NZ butterflies; etc.

- *pitthamd@xtra.co.nz*

8. Tieke. Weekly newsletter of Environment & Conservation Organisations of NZ Inc. (ECO). E-newsletter from:

- *eco@eco.org.nz*

9. Otari-Wilton's Bush Trust News and Views. 6/18: Trust Board report 2017–18; 55–85 Curtis St. development; Otari at Hampton Hill School BioBlitz; research on seed-banking Myrtaceae seeds; *Dracophyllum strictum*; etc. 9/18: Chairman's message; Team Manager's report; Otari Plant Conservation Laboratory; Open Day – 22/9; Alpine Garden renovation; *Geranium microphyllum* var. *discolor*; etc.

- *Otari-Wilton's Bush Trust, 160 Wilton Rd, Wilton, WN 6012.*

10a. Forest & Bird. 368 Winter 2018: Large-scale irrigation schemes; funding boost for DOC; F&B's conference; can we save kauri forests; Far North bioblitz and 8.6 km pest-proof fence proposal in Ngāti Kuri rohe; Craigieburn wasp-eradication programme; NZ's largest pine-to-native forest restoration project; home gardens the biggest source of invasive weeds; NZ loses 190 million tonnes of soil to erosion p.a.; impacts of climate change; etc.

10b. Wild Things. 138 autumn 18: 30 years in conservation; field trips; some features of birds; butterflies; mast year; pest animals; 139 winter 18: Categories of protected land; pest control in Northland; building a leaf-litter biodome; importance of mangrove forests; dog detecting bitterns; biocontrol of pest plants; etc.

- *F&B, Box 631, WN, www.forestandbird.org.nz, office@forestandbird.org.nz*

11. Friends of the Wellington Botanic Garden. 6/18: President's report; manager's report; tours for VUW students in the garden; history behind the names of paths in the garden; etc.

- *FoWBG, Box 28-065, Kelburn, WN 6150. www.friendswbg.org.nz*

12a .The Miramar Peninsula Good Neighbour Guide. Brochure. Te Motu Kairangi – Miramar Ecological Restoration.

12b. Miramar Nectar Calendar.

- *www.temotukairangi.co.nz*

13. Environmental Defence Society. 8/18: Billion trees – still too many pines; Climate Commission on track; Mackenzie Basin improving; RMA project; Te Mata Peak case; etc.

- *EDS, Box 91736, Victoria St West, AK 1142, www.eds.org.nz*

14. The Tararua Tramper. 6/18: *Gahnia setifolia*. 7/18: *Dianella nigra*. 8/18: *Astelia solandri*. 9/18: *Astelia fragrans*.

- *www.ttc.org.nz Tararua Tramping Club, Box 1008, WN.*

15. Gorge Gazette. 39 6/18: *Tradescantia*; rodent control; track from Oban St into Trelissick Park – survey of community responses, etc.

- *www.trelissickpark.org.nz*

16a. Pīpipi. 47 5/18: Map; gorse transmogrifies into native forest; battling *Pinus radiata*; Hinewai has 350 locally indigenous wild vascular plant species, and 230 introduced species; *Brachyglottis lagopus*; myrtle rust; patē and māhoe in fruit; *Celmisia mackaui*; etc.

16b. Hinewai Information brochure and A5 map.

- *Hinewai Reserve, 632 Long Bay Rd, Akaroa 7583. Donations welcome –make cheques to Maurice White Native Forest Trust. Direct credits to BNZ Akaroa 02 0832 0044225 00*

17. Backcountry. 6/18: DOC decision-making; the different types of conservation land; Waitākere tracks closed; myrtle rust on Mt Karioi; backcountry Te Reo; backcountry biosecurity; etc. 8/18: Concerns about mountain-bike tracks on public conservation land; backcountry Te Reo; etc.

- *Federated Mountain Clubs. Box 1604, WN WN 6140, www.fmc.org.nz*

18. NZ Lichens. Bill & Nancy Malcolm. 2018. Macro-Optics Press. 307 pp, >700 colour photos, micro-optic views, drawings & diagrams. $69 incl. p&p in NZ.

- *nancym@micro-optics press.com or Box 320, Nelson 7040, or ph 03 545 1660. PayPal or direct credit.*

19. Seed germination, dormancy and longevity in the endangered shrub *Muehlenbeckia astonii* (Polygonaceae). Debra M. Wotton. Debra's research was part-funded by a grant from our Jubilee Award Fund. See abstract in this newsletter.

- *NZ Journal of Botany, 56:3, 331-341, DOI: 10.1080/0028825X.2018.1491862*

20. Nga Uruora. Dr Geoff Park. Reprinted 2018. Available at Unity Books, 57 Willis St, Wellington. Paperback, 406 p, $35.

SUBMISSIONS CALLED FOR

- *November— date to be advised.* **Wellington Outer Green Belt Management Plan.** Check Public Notices in *The Dominion Post*, also the WCC web site.

SUBMISSIONS MADE

We were expecting draft long-term plans (LTPs) from Greater Wellington Regional Council (GWRC) and Wellington City Council (WCC) because LTPs have to be updated every three years. Two additional consultations by GWRC, however, came as a surprise: an early review of the Parks Network Plan 2011, and the statutory consultation on the proposed Regional Pest Management Plan 2019–2039. Both consultations raised some challenging issues. Both had unreasonably short timelines.

WCC'S LONG-TERM PLAN

Predator control

We supported WCC's proposal to increase funding for predator control, but couldn't resist pointing out that Predator-Free NZ promotional material rarely mentions the wider ecological benefits of predator control, e.g., more native plants will germinate if there are fewer possums, rats and mice to eat their flowers and seeds.

Weed control

We urged WCC to allocate extra funding for weed control, pointing out that back in 2011, McGlone, M., and Walker, S., had warned that the most troubling likely consequences of climate change included the arrival of new weeds and the increased invasiveness of existing weeds.

Biodiversity governance

We encouraged WCC to review its biodiversity governance systems. WCC consults extensively when developing specific strategies and plans, e.g., *Our Natural Capital*

(2015), but it puts much less effort into integrating those plans and reporting back on what's been achieved.

Council's response

We've received the standard letter, and it promised a more detailed response.

TOWARDS GWRC'S PARKS NETWORK PLAN (PNP) 2019–2029

Back in 2011, we welcomed GWRC's plan to introduce one consolidated management plan for all eight regional parks, instead of continuing to review the park management plans, one by one. The new approach, set out in the *Parks Network Plan* 2011, also allowed for some park-specific policies and plans.

In a separate initiative under GWRC's *Biodiversity Strategy 2011–21,* GWRC identified areas with special biodiversity values on public and private land throughout the region, then introduced the Key Native Ecosystems (KNEs) Programme to protect those values. There are KNEs in all regional parks. Next came detailed KNE plans to describe the work to be done over a three-year term in each KNE. The plan for Te Mārua Bush is in the KNE Plan for Kaitoke Regional Park 2014–2017.

The reasons for the early review of the 2011 plan are not clear, but many issues, opportunities and proposals are flagged in three informative "Food for Thought" papers released in June 2018; a *Parks Plan Discussion Document* (74 pages), *External Influences on Parks* (47 pages), and *Farming in Regional Parks* (73 pages).

The farming paper, (p.63), shows forestry options are also being investigated:

> *At Kaitoke, planting mānuka would cost about $4,100/ha, while planting a mix of forest species would cost about $42,500/ha. The total capital cost of planting the 74 ha grazed at this park in mānuka would therefore be approximately $320,000, planting a mix of forest species approximately $3.1 million. For new plantings to survive, a maintenance cost of about $1750/ha per year for weed management for five years would also be required.*

Submission

Our submission included the following points:

- we were pleased to find climate change was recognised as a key consideration for biodiversity planning
- we suggested additional staffing would be needed to support and supervise the expected increases in the number of volunteers
- we asked about GW's plans for managing priority Myrtacaeae, both populations and iconic trees
- we urged caution in applying the following philosophy ("It may be that, over time, weeds are gradually overtaken by native plants, and that the speed of this may be acceptable").

More plans for some parks

Given the 2011 intention to reduce the number of plans and hence consultations, it was disturbing to read that another type of plan is proposed, Park Environment Plans, with a 30–50 year horizon, to guide decisions on grazing, land retirement and restoration.

Next step

Two months' consultation on the draft PNP is scheduled for early 2019.

GWRC'S PROPOSED REGIONAL PEST MANAGEMENT PLAN 2019–2039

Just two days after we lodged our PNP submission, GWRC asked for submissions on its 108-page proposed Regional Pest Management Plan (RPMP) 2019–2039, which was supported by a 200-page cost/benefit analysis. The timeline was just 28 days.

Understanding the proposed RPMP was hard work. We've urged GW to make the final RPMP easier for more people to understand.

- The purpose statement is: "to outline a framework for managing or eradicating specified organisms efficiently and effectively". There was no foreword or executive summary to explain what this means.
- The significance of the word "specified" in the purpose statement became clear on page 21 where we learned that just 15 weeds are specified in the proposed RPMP. Three weeds are to be excluded. Five are to be eradicated. One is subject to progressive containment, and three to sustained control. These categories/programmes relate to the Invasion Curve. Three other weeds will be controlled at sites in Lower Hutt.
- Appendix 2 (p. 94) contains a list of another 100 weeds called "Other Harmful Organisms", e.g. Darwin's barberry, pampas, and didymo. GWRC may control these weeds in KNEs and on some council reserves. It may monitor them, but the rules and systems in the RPMP won't apply.
- The term 'unwanted organisms' is not the same as 'harmful organisms'. It has a statutory meaning in the context of the RPMP, but is not defined in the Glossary.

Other themes in our submission

- We are opposed to removing feral deer and feral pigs from the RPMP; and treating them as 'Other Harmful Organisms'.

- We think GWRC was too quick to dismiss climate change as a pest management issue.
- There was no mention of diseases such as myrtle rust.
- There is a list of seven advocacy and education functions but no objectives or targets

Overall

The proposed RPMP reads more like a plan for an organisation (GWRC) than a plan for a geographic region (Wellington). Given the multiplicity of organisations with pest management plans and responsibilities in the Wellington region, we think it's time those organisations developed an integrated pest management plan for the region.

Next steps

We've indicated we may suggest changes to the lists of weeds before the hearings. We also want to examine the performance data in GWRC's annual RPMS Operation Plan Reports.

GWRC STARTS REVIEW OF BIODIVERSITY STRATEGY 2011–2021

Just before we lodged the RPMP submission, GWRC sent out invitations to workshops entitled "**Designing a shared way forward for our region's biodiversity"**. These workshops, in August and September, provide an opportunity for individuals and groups to contribute to the development of a **region-wide biodiversity framework.**

GWRC'S DRAFT LONG-TERM PLAN

See Chris Horne's report about BotSoc's submission on GWRC's LTP in the May newsletter.

Bev Abbott

2018/19 committee

At the 79th Annual General Meeting, held on 20 August 2018, the following were elected:

President	Jon Terry	021 168 1176
Vice-presidents	Owen Spearpoint	562 8780
	Sunita Singh	387 9955
Secretary	Lara Shepherd	384 7147
Treasurer	Lea Robertson	473 8211
Auditor	Jane Humble	971 6970
Committee		
	Eleanor Burton	479 0497
	Frances Forsyth	384 8891
	Richard Herbert	232 6828
	Chris Horne	475 7025
	Sunita Singh	387 9955
	Julia Stace	385 4606
Submissions coordinator	Bev Abbott	475 8468
Bulletin editor	Eleanor Burton	479 0497
	esmeraldadoris92@gmail.com	

Newsletter by e-mail?

If you would like to help us to reduce our postage costs by receiving your newsletter by pdf, please advise Lea Robertson: harlea@actrix.co.nz

Letters to the editor

We would welcome your comments on any aspect of BotSoc's activities:

- places you would like to visit on field trips
- topics you would like to have covered in evening meetings
- topics you would like covered in BotSoc's Bulletin and Newsletter
- other matters of concern or interest to you.

If you would like to offer to lead a field trip, or be a deputy leader on a field trip, please contact our programme organiser, Sunita Singh, *sunita@actrix.co.nz*

Thank you, The committee

GWRC Pest Plants—review of the past few months

Winter is always a quieter time for pest-plant control activities, with lower ground temperatures and inactive growth periods of target species meaning it isn't a good time to do control work. We have been reviewing the work done in the region's network of Key Native Ecosystem areas last season, and planning what needs doing next season. This is often a continuation of the same work programmes, with perhaps differing priorities. We are also taking on some wetland sites under our Wetland Programme. These run for a three-year term, so the sites will change on a steady basis.

As you will know, the proposed *Regional Pest Management Plan* is being reviewed—we have been analysing the submissions we received and considering the suggestions requests.

In addition to this, we have made a submission in support of the proposal to introduce the gall mite *Aceria vitalbae* as a biological-control agent to assist with the management of the weed old man's beard (*Clematis vitalba*). An effective biocontrol agent for old man's beard (OMB) will help to slow the spread and impact of this highly invasive and difficult to control species. OMB's rapid growth rate, widespread distribution across the Wellington Region, and highly invasive nature, means conventional methods of control are often unsuccessful and uneconomic, leaving biocontrol as the only effective long-term management option. GWRC is a contributor to and participant in the National Biological Control Collective (NBCC), and supports the establishment of biocontrol species. A successful biocontrol agent for OMB would ease the reliance on manual removal of the plant and the use of herbicides. Through the NBCC, GWRC is involved in a growing number of biocontrol projects and believes it is an essential part of the future of pest plant management in NZ.

Our Field Team has been working mainly in Queen Elizabeth Park (boneseed and rhamnus/evergreen buckthorn) and in East Harbour Regional Park (climbing asparagus control, most recently in the Butterfly Creek area). They have also done boneseed control in other parts of the region.

Katrina Merrifield, Biosecurity Officer (Plants)
Greater Wellington Regional Council Te Pane Matua Taiao
www.gw.govt.nz

President's Report to the 79th Annual General Meeting of the Wellington Botanical Society

Welcome to the 79th Wellington Botanical Society AGM. The last year has seen us botanise the Volcanic Plateau, the Wairarapa, and many local sites as well. Finding new sites for us to explore is always a challenge. The map below shows Wellington BotSoc trip locations for the last year (in black) and since 2010 in grey. We certainly get around!

This year, thanks to the generosity of the Wellington 4WD Club, we were able to botanise an area of Te Kopahou Reserve that we would otherwise not have been able to access. Hopefully such collaborations can continue in the future, as they allow us to explore new areas rather than revisiting the same sites. Access to private land also provides new areas to visit and we thank landowners for their generosity in letting us botanise their properties. If you know of any out-of-the-way sites with interesting botany, particularly those with friendly landowners, then have a chat to our trip organiser Sunita Singh. We are also always after new people to lead trips – if you would like to volunteer then talk to Sunita and we can pair you up with an experienced trip leader.

Membership 2017/2018

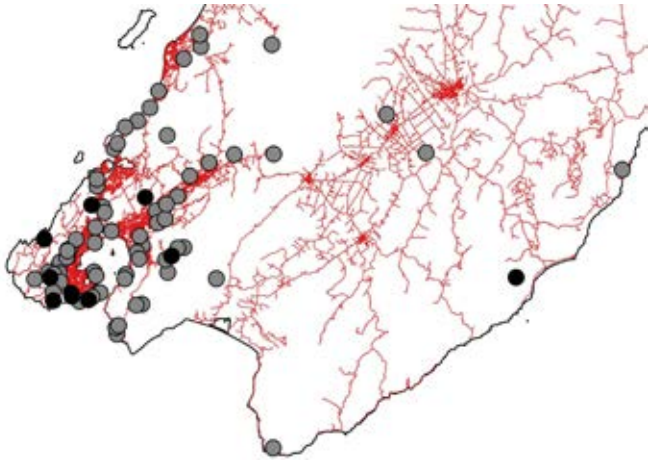
Membership over the year has again remained broadly stable. We have 113 Ordinary Members, 31 Country Members, 61 Group Members, 30 Life Members, and 5 Student Members. The total membership figure stands at 240, slightly down from last year, but above the figure for 2015/2016.

Trips

The summer camp was well attended with 34 participants making the trek to Taurewa Camp on the Volcanic Plateau. The central location of the camp enabled us to visit a wide variety of habitats from the alpine zone to lowland forest, all within a short drive of the camp. Highlights for me included the range of alpine flowers on Mt Ruapehu and the hidden gem of Ohinetonga Scenic Reserve at Owhango. Thanks to Chris Moore for co-leading the trip and Richard Herbert and Leon Perrie for logistical support. I greatly appreciated Bev Abbott's pre-camp advice on the catering. Graeme Jane and Mike Wilcox provided species lists and Chris Horne organised a collecting permit.

There were twelve other fieldtrips within the wider Wellington region last year. The most popular trips were to the Wainuiomata catchment (30 attendees) and Moa Point seaweeds (29 attendees). Thanks to Sunita Singh for organising the programme of trips, the landowners and to those who led trips, especially people leading trips for the first time this year.

2.9.2017	Forest of Tāne, Tawa	19
7.10.2017	Saline wetland, Wairarapa	19
4.11.2017	Moa Point seaweeds	29
11.11 2017	Te Mārua Bush workbee	16
4–11.1.2018	Taurewa Camp, Volcanic Plateau	34
3.2.2018	Te Kopahou Reserve	23
3.3.2018	Boulder Hill, Belmont Regional Park	23
7.4.2018	Wainuiomata catchment	30
5.5.2018	'Tanah Burung', South Karori Rd	22
9.6.2018	Paekawakawa Reserve & Oku St Reserve, Island Bay	16
7.7.2018	Manawa Karioi, Island Bay	12
14.7.2018	Te Mārua Bush workbee	14
4.8.2018	DOC Covenant, Makara Farm	22



WBS field trip locations. Black dots are sites visited in the last year. Grey dots are sites visited since 2010.

Meetings

Sunita organised an engaging and educational programme of talks this year and I would like to thank her, as well as all our speakers for the effort they put into preparing and delivering presentations. Topics ranged from seaweeds to threatened plant listing, from Māori archaeological sites to the impacts of the Kaikoura earthquake on the region's flora. Alex Fergus's talk on the plants of the Subantarctic Islands drew the biggest audience this year with 58 attendees; Leon Perrie's talk was a close second with 57 people turning up to discover more about ferns.

17.7.17	C Moore; Stephen Hartley	42
21.8.2017	AGM; Rodney Lewington, Tony Silbery, Chris Horne	35
18.9.2017	Wendy Nelson	47
16.10.2017	Nathaniel Walker and Stacey Bryan	35
20.11.2017	Jill Rapson	42
19.2.2018	Matt Ryan	42
19.3.2018	Leon Perrie	57
16.4.2018	Alex Fergus	58
21.5.2018	Members' evening	24
18.6.2018	Jan Clayton-Greene	44

Communications

Newsletter: Three issues of the newsletter were produced during the last year – September and December 2017, and May 2018. Thank you to Chris Horne and Jeremy Rolfe for preparing, formatting and producing the newsletter.

Bulletin: Eleanor Burton is close to finalising the next volume of the Bulletin.
Website: Thank you to Richard Herbert and Julia White for your fantastic work managing our website and dealing with enquiries, respectively.
Facebook page: the Wild Plants of Wellington Facebook page continues to draw new members with membership growing from 237 this time last year to 341. It continues to be a good way to advertise our trips and meetings and to reach a new audience, particularly a younger demographic. It also serves as a forum to share news about plants, obtain plant identifications and recommendations and to start botanical discussions. Thanks to Julia White and Leon Perrie for administering the site.

Submissions

Bev Abbott spends a considerable amount of time preparing and presenting submissions on behalf of the Wellington Botanical Society. Thank you Bev for your enthusiasm for this role and to the committee for their thoughtful discussions on submissions. Thanks also to Chris Horne who prepared the Wellington Botanical Society submission on Greater Wellington Regional Council's Draft Long-Term Plan in Bev's absence.

Our newsletters include reports on some of the themes raised in our submissions on the following draft strategies and plans:

Greater Wellington Regional Council
- Draft Long-Term Plan 2018–28
- Draft Parks Network Plan 2019–2029
- Proposed Pest Management Plan 2019–39.

Wellington City Council
- Draft Long-Term Plan 2018–28
- Preliminary consultation Te Kopahou Reserve Management Plan

Upper Hutt City Council
- Draft Open Space Strategy 2017.

Awards

Matt Biddick received our Graduate Student Grant, which will aid his study of the morphological differences between offshore island plants and their mainland relatives. Kat de Silva received the Jubilee Award. She is studying factors that constrain or promote urban reforestation in revegetation projects, and how these change over time. We awarded two prizes at the NIWA Science Fair: Katie Harford's project examined native New Zealand plants vs bacteria, and Lucy Hegan and Sarah Scott looked at sea lettuce and the reduction of nitrogen in polluted water.

Thanks to all the Wellington Botanical Society members who provided plants and books for sale at our meetings, and to those who bought them as this contributes to these awards.

Committee

The committee met regularly over the past year, mostly at the Leonard Cockayne Centre at Otari-Wilton's Bush, with this venue organised by Eleanor Burton. I would like to acknowledge the committee for the behind-the-scenes work they do to ensure the smooth running of the society.

Thank you Owen Spearpoint (Vice-President), Frances Forsyth (minute taker), Bev Abbott (submissions coordinator), Barbara Clark (secretary), Lea Robertson (treasurer), Sunita Singh (organiser of field trips and speakers), Eleanor Burton (editor, BotSoc Bulletin), Richard Herbert, web site maintenance, and Chris Horne (editor, BotsSoc newsletter). I would like to especially thank Barbara Clark, who steps down as secretary this year but who will leave big shoes to fill. Barbara has been secretary for 17 years and we will miss her organisation and experience in this role. In recognition of her contribution the committee has made her an honorary life member of the Wellington Botanical Society.

Other thanks and acknowledgements

In addition to the people acknowledged above, I would also like to thank the following:
- Barbara and Kevin Clark for hosting the annual committee BBQ at their house.
- Sunita Singh, Trudi Bruhlmann, Ian Goodwin, Jill Goodwin, Lea Robertson, and Chris Horne for mailing out the newsletter and Kaaren Mitcalfe for providing a venue.
- NZ Print for their work printing the three issues of the newsletter.
- Victoria University of Wellington for the use of Murphy Lecture Theatre 101 for holding our meetings.

Lara Shepherd, President

Annual Report from the Treasurer, Wellington Botanical Society for the year ending 30 June 2018

The accounts for the financial year ended 30 June 2018 show a surplus of $1,719 on the normal operations of the Society recorded in the General Account. Website invoices were not received, and although publication of the Bulletin has been delayed, provision is made for the following issue. An increase in postage expenditure reflects advance purchase of Kiwistamps and prepaid envelopes given a postal price increase from 1 July 2018.

Transfer of $960 each year from the General Account to the Victoria University Student Field Grant Account represents rent of the lecture room we use for meetings. The University allows the Society to use the room for our monthly meetings free of charge.

On the income side, subscriptions received have decreased by $360. Some memberships lapsed, and more members made advance payments late last year. Interest received increased. Currently we have an average interest return of 3.89% p.a. on invested funds up from 3.71% p.a. last year.

$2,600 was awarded from the Jubilee Award Fund, $600 was given as a Victoria University Student Field Grant, and $150 was awarded to a school student at the NIWA Wellington Science Technology Fair 2017. Jubilee Award Fund donations remained steady, and our sales effort improved markedly. Funds are in place to cover Bulletin 57 printing costs in the 2018/2019 financial year.

The full performance report has been filed with Charities Services, and will be loaded on their website https://www.charities.govt.nz/.

Wellington Botanical Society Inc.
Income and Expenditure for the Year ended 30 June 2018

General Account

2017	Expenditure	2018	2017	Income		2018
912	Printing and Stationery	996	3,280	Ordinary subscription	3,310	
257	Post and telephone	507	1,075	Country subscription	945	
205	Web site costs	0	60	Student subscription	30	
410	Meeting and Speakers' expenses	512	1,184	Group subscription	954	
265	Administration	211				
195	Subscriptions to other organisations	180	5,599	Total Subscriptions		5,239
0	Petty cash	7	1,738	Interest on investment		1,854
960	Transfer to Student Award Fund	960				
3,000	Transfer to Bulletin Account	2,000				
1,133	Surplus on General Account for the year	1,719				
7,337		7,093	7,337			7,093

Jubilee Award Fund

2017	Expenditure	2018	2017	Income	2018
			71,061	Opening Balance	72,719
150	Science Fair Award	150	1,485	Donations	1,335
			124	Proceeds of book sales	103
2,600	Jubilee Award	2,600	16	Plant sales	148
72,719	Closing Balance	74,411	2,783	Interest on Investment	2,856
75,469		77,161	75,469		77,161

Tom Moss Student Award in Bryology

2017	Expenditure	2018	2017	Income	2018
			10,256	Opening Balance	10,643
0	Student Award	400		Donations	
10,643	Closing Balance	10,661	387	Interest on Investment	418
10,643		11,061	10,643		11,061

John Child Workshop Contingency Fund

2017	Expenditure	2018	2017	Income	2018
			5,101	Opening balance	5,294
5,294	Closing Balance	5,502	192	Interest to date	208
5,294		5,502	5,294		5,502

Student Field Grant

2017	Expenditure	2018	2017	Income	2018
			8,783	Opening Balance	9,493
600	Grants to Students	600	350	Interest on Investment	373
9,493	Closing Balance	10,226	960	Transfer from General Account	960
10,093		10,826	10,093		10,826

Provision for Bulletin

2017	Expenditure	2018	2017	Income	2018
	Printing Bulletin		4,588	Opening Balance	7,632
	Distribution costs		44	Sale of bulletins	0
			3,000	Transfer from General Account	2,000
7,632	Closing Balance	9,632			
7,632		9,632	7,632		9,632

Balance Sheet as at 30 June 2016

2017	Liabilities	2018	2017	Assets		2018
2,010	Life Membership Fund	2,010	2,803	BNZ Current Account		2,963
72,719	Jubilee Award Fund	74,411	0	less Unpresented cheques		0
10,643	Tom Moss Student Award in Bryology	10,661	10	Cash held		3
9,493	Student Field Grant Fund	10,226	673	BNZ Business on call Account		5,686
5,294	John Child Workshop Contingency Fund	5,502	3,485	Bank Funds on current account		8,652
7,632	Provision for Bulletins	9,632	20	Fax Machines less depreciation		20
			50	Display unit less depreciation		50
			30	Projector		30
			16	Stock of Bulletins		16
			59	Stock of Tony Druce Trip Books		59
			24	Camping Equipment		24
			1,055	Stock of postage paid envelopes		1,406
45,241	Accumulated fund as at 30 June 2017		409	Stock of stamps		570
	plus surplus for the year 1,719			Investment Pool		
			103,313	BNZ Finance Term Depos	102,330	
	Accumulated fund as at 30 June 2018	46,961	44,571	Westpac Term Deposits	46,246	
						148,576
$153,032		$159,402	$153,032			$159,402

The Society has a # 2 current account used for field trip finances. As at 30th June 2018, the 02 account had a credit of $601
This account is not included above, but overseen by the summer camp leader(s) and Treasurer.

I have examined the accounting records of the Wellington Botanical Society Inc. and have received all the explanations requested.
I believe the accounts and balance sheet to be a true and fair record of the Society's operation and its financial position at the close of the financial year.

Auditor J. Humble
Date 30.7.18

Seed germination, dormancy and longevity in the endangered shrub *Muehlenbeckia astonii* (Polygonaceae)

Debra M. Wotton
Moa's Ark Research, Paraparaumu
Biological Sciences, University of Canterbury,
ChristchurchLandcare Research, Lincoln, New Zealand

Abstract

Muehlenbeckia astonii Petrie (*Polygonaceae*) is a nationally endangered shrub undergoing widespread recruitment failure in the wild. Seed germination, dormancy and longevity were investigated to determine factors potentially constraining *M. astonii* regeneration and population persistence. *Muehlenbeckia astonii* seeds were collected from restoration plants sourced from Kaitorete Spit, Canterbury. Germination percentage of untreated control seeds in a growth room (20 °C with 16 hours of light daily) was compared with that of seeds in two treatments: (1) chilled at 4 °C for 2 weeks; and (2) chilled for 12 weeks. I also investigated seed longevity by comparing germination of unburied, 6-month old, cold-stratified *M. astonii* seeds with germination of seeds buried in the field and retrieved after 1–4 years. All seeds were sown in pots outdoors. In the growth room, 24% of untreated *M. astonii* seeds germinated, while cold-stratification for either 2 or 12 weeks increased germination significantly (to 76%). In the seed longevity experiment, 85.2% of unburied *M. astonii* seeds sown 6 months after collection germinated. *Muehlenbeckia astonii* seeds survived burial under the soil in the field for up to 4 years. However, germination declined rapidly to 27.6% after burial for 1 year, and only 2.8% of the seeds germinated after 4 years of burial. The high germination of cold-stratified seeds suggests that low seed viability is not limiting *M. astonii* regeneration at Kaitorete Spit. *Muehlenbeckia astonii* has the potential to form a soil seed bank, which may buffer small, isolated populations from local extinction in the short term (< 5 years).

Source: NZ Journal of Botany 2018 Vol.56, No.3 331-341.
Debra's research was funded in part by a grant from BotSoc's Jubilee Award Fund.

Otari-Wilton's Bush report

Kia ora koutou.

I'm pleased to announce the appointment of Megan Ireland as gardener based here at Otari. Megan comes from a background of horticulture in England and Scotland. She has also worked in some NZ gardens, including Dunedin BG, for Annabel Langbein in Wanaka, and has worked twice previously at Otari. Megan replaces Nas Mulligan who moved to a horticultural position in Christchurch.

We have almost completed the establishment of the Lions Otari Plant Conservation Laboratory, 90% of the lab equipment has arrived, resource consent has been granted and building consent will follow soon. The laboratory will support plant conservation through research into seed storage behaviour, assessing seed viability, in-vitro propagation and establishing germination protocols.

The Lions Karori Club initiated funding for this project. I thank them for the funding they have made available and for their genuine interest and perseverance with this project. The laboratory project is a milestone for us. No other botanic garden in NZ has this type of facility. It will enable us to do work we have not been able to do before, increase our ability to partner with others and show that we mean business in ex-situ plant conservation.

The laboratory heralds the beginning of possible further changes to our nursery. We've recently embarked on a project with Victoria University School of Architecture to look at possible changes. Landscape architecture students have been developing concept designs for the nursery and surrounds. We would like to upgrade the nursery infrastructure and equipment, rearrange the nursery layout to improve efficiency and safety, and integrate the nursery into our visitor experience. The concept designs will be displayed at the Central Library, on the mezzanine floor near Clark's Café from 14–23 September. The concepts will be subject to public voting, so if you are passing the Central Library, please pop in for a quick look and vote for your favourite.

With the creation of Te Tauihu, Te Reo Māori policy for Wellington City Council we now have a platform from which to incorporate Māori into our signs and interpretation. Over the coming months and years you will notice this beginning to show as we replace old signs and install new ones.

Otari Open Day is shaping up well. Our programme includes the usual plant sale (10 a.m.), Otari-Wilton's Bush Trust BBQ and stalls. Capital Compost is joining us this year, along with a pop-up market in the Leonard Cockayne Centre featuring nature-inspired goods by local makers. In the Te Marae o Tāne Information Centre the Open Lab will feature real lab equipment to investigate what creatures are out there on a microscopic level.

Hope to see you there.

Kind regards.

Rewi Elliot, Team Manager – Otari-Wilton's Bush,
rewi.elliot@wcc.govt.nz

Baring Head, East Harbour Regional Park

The 2018 planting season has almost finished. With one more planting day due we will have 2600 seedlings planted by volunteers, including a large group from the Garage Project brewery. As I reported in the last newsletter, these were mainly riparian plantings by the Wainuiomata River, with priority given to protecting and enhancing several inanga spawning sites. This was the first year that we obtained crowd funding through the Sustainable Business Network's Million Metres programme. This has proved so successful that we've decided to increase the effort in 2019 to 5,000 plants, so we're seeking funding from the public. Greater Wellington have contracted Remutaka Prison to propagate them and Conservation Volunteers will organise and oversee the plantings.

If you would like to contribute, then go to https://millionmetres.org.nz/donate/?project=2019-wainuiomata-river-restoration-at-baring-head. We've received a very generous offer from a private donor to match contributions up to $15,000, so your support will go a long way.

Colin Ryder
Treasurer, Friends of Baring Head

Obituary – Roger Michael Greenwood 1920–2017

Michael Greenwood.

Michael Greenwood, a life member of Wellington Botanical Society since 1953, died in Palmerston North on 14 August 2017. Until his retirement in 1980, he worked at Plant Chemistry Division and Applied Biochemistry Division, DSIR, where his work on isolating and typing *Rhizobium* bacterial strains, measuring their ability to nodulate their specific legume hosts was an important scientific development crucial to the productivity of NZ pastures.[1]

He also co-authored papers with another BotSoc luminary, Dr Ian Atkinson, notably seminal papers in the 1970s and 1980s suggesting the moa hypothesis for the unusually high frequency of occurrence of divaricating shrubs and juvenile trees in NZ.[2]

Born in New Plymouth, he initiated a career in biological science in Havelock North guided and inspired by respected amateur botanist and teacher, Norman Elder. He went on to contribute to the scientific effort of World War II, in work on improving the quality of dehydrated vegetables being supplied to troops in the Pacific, and also on the newly discovered hormone-type weed-killers and dangers of trace contamination.[3] He built a house at Atawhai Road near Massey University and developed the now covenanted Greenwood's Bush where Landcare Research employee John Innes did his Master's thesis on rats.[4] In his will, he bequeathed his Atawhai Road planting to the C.T. Keeble Memorial Forest Trust.

The Esler, Greenwood and Robertson family offspring were early, enthusiastic members of the Junior Naturalists' Club, which he was instrumental in establishing. In 1984, he was involved with the "Save the Odlins Block Committee" which, through negotiation, saved a 2000-hectare area of native bush at Tokomaru from being logged. The area has since been returned to Tararua Forest Park. In 1993, he was awarded the Loder Cup for his outstanding contribution to the conservation of our unique flora. In 1997, he received a Civic Honour for community service, particularly to education and science, and in 2010, he was awarded Honorary Life Membership of the New Zealand Ecological Society for his scientific achievement, contribution to restoration ecology[5] and to Keeble's Bush, which is a 15.5-hectare protected bush reserve considered to be the finest remaining example of podocarp/broadleaf lowland forest in the Manawatū. Mr Greenwood was inaugural chair of the C.T. Keeble Memorial Forest Trust. He worked to provide for the security of the Bush, developed or overviewed its two associated restoration plantings, and continued throughout his lifetime to care for their flora and well-being.[6]

Lea and Hugh Robertson

1 Tribute to RM Greenwood, *Trilepidea 166*, September 2017, www.nzpcn.org.nz/publications/Trilepidea-166-170923.pdf

2 Ecological Society newsletter, 134, December 2010, pp 6–7 https://newzealandecology.org/sites/default/files/EcolNews_December_2010_134.pdf

3 Dr Jill Rapson (pers comm)

4 Biology and ecology of the ship rat, *Rattus rattus rattus* (L.) in Manawatu (N.Z.) forests, Master of Science in Zoology, Massey University, https://mro.massey.ac.nz/handle/10179/6614

5 NZES Awards for 2010 – abridged nomination by Dr Jill Rapson https://newzealandecology.org/sites/default/files/EcolNews_December_2010_134.pdf

6 'Two areas of about five hectares adjacent to the Bush were also developed to greatly improve the ecological resilience of the original Bush remnant. Many small remnants of native vegetation persist today on agricultural land, and are assuming increasing importance as New Zealand's biodiversity declines and human impacts increase' http://www.massey.ac.nz/massey/about-massey/subsidiaries-commercial-ventures/massey-agricultural-experiment-station/keebles-farm/keebles-farm.cfm

Subscriptions overdue

Some subscriptions have yet to be paid, so if you have received a 'red dotted' notice with this newsletter, please note how much we appreciate your continued support. Payment can be made by cheque posted to:

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Wellington Botanical Society,
PO Box 10 412,
Wellington 6143

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Subscription rates remain:

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Lea Robertson, Treasurer

Queen's Service Medal awards

We congratulate Sue Millar, Glennis Sheppard and Allan Sheppard who received QSMs in the Queen's Birthday Honours for their work in conservation. All are members of Forest & Bird's Upper Hutt Branch, and of BotSoc. Since 1992, Sue and Glennis have co-lead workbees in Te Mārua Bush, usually accompanied by Allan. They have all also worked in Hulls Creek, Barton's Bush and Domain Bush in Trentham Memorial Park, and Keith George Memorial Park, on weed and pest-animal control.

The committee

Letters to the editor

We would welcome your comments on any aspect of BotSoc's activities:

- places you would like to visit on field trips
- topics you would like to have covered in evening meetings
- topics you would like covered in BotSoc's Bulletin and Newsletter
- other matters of concern or interest to you.

Thank you
The committee

Wellington Botanical Society Bulletin—back-issues

Expand your collection of our informative "flagship" publication.

Limited numbers of copies of the following back issues are available:

1950s: no. 23 (9/50), no. 30 (12/58).
1960s: no. 32 (12/61), no. 33 (2/66), no. 34 (11/67), no. 35 (10/68), no. 36 (12/69). Index to Bulletins nos. 1-35.
1970s: no. 37 (11/71), no. 38 (9/74), no. 39 (10/76), no. 40 (8/78).
1980s: no. 41 (9/81), no. 42 (9/85), no. 43 (4/87), no. 44 (11/88), no. 45 (11/89).
1990s: no. 46 (12/94), no. 47 (9/96).
2000s: no. 48 (9/02), no. 49 (12/05).

Cost $5 per issue, incl. p&p; $15 for any five issues incl. p&p.

Copies of more recent Bulletins, no. 50 (3/07), no. 51 (11/08), no. 52 (4/10), no. 53 (6/11), no. 54 (11/12), no. 55 (11/14), and no. 56 (5/16) are $11 each incl. p&p, to members and other individuals, and $21 each incl. p&p, to organisations, posted within NZ.

Contact Chris Horne to confirm availability: JCHorne15@gmail.com, phone 04 475 7025.

Please either:

- make your cheque payable to Wellington Botanical Society, PO Box 10 412, Wellington 6143
- or pay direct to the Society's bank account 020536 0017812 00, with your name and Bulletin as reference.

Many thanks.

Lea Robertson, Treasurer

MEMBERS' EVENING – 21 MAY 2018

Jill Goodwin

Jill read about nīkau from *NZ's Native Trees* (Dawson & Lucas. 2011, page 508), that "After the seedling has developed a few leaves, the growing point of the stem curves over and downwards to a depth of c. 15 cm. The deep growing point continues to be connected to the mostly emergent fronds, eventually growing upwards to emerge above the soil. Many large fronds are formed, but a trunk does not develop for 15 years or more, above and below ground. So in this way the base of the trunk ends up firmly embedded in the ground, like a post in a post hole."

Sumitra Manga

Sumitra described her ideas for increasing the public's awareness of BotSoc through possible changes to our web site.

Sarah Wilcox

Sarah showed slides taken in the South Island high country of *Gastrodia* sp., *Aciphylla* sp., *Lycopodium volubile*, *Huperzia varia*, *Celmisia sessiliflora*, *Coprosma atropurpurea* and *Astelia nervosa*, and on the beech-forest floor, a moss, *Dicranoloma* sp., and a lichen, *Pseudocyphellaria* sp.

Lycopodium fastigiatum.

Ranunculus lyallii.

Eleanor Burton

Eleanor showed some of the 550-600 pottery tiles she has made for the path outside her back door. They feature images of native plants. She also showed some of her pen-and-ink drawings, e.g., *Helichrysum dimorphum*.

Chris Horne

Chris read from *Canterbury Botanical Society Journal 48 2017*, part of Miles Giller's article: "Restoration planting – Are we saving or sabotaging our precious native remnants?":

"Nature is far from random. Naturally occurring vegetation sorts itself out according to ecological patterns and processes. Various species occupy particular niches, some are generalists and others are quite specific in terms of where they will or won't flourish. Different species have differing preferences or tolerances of soil types, aspect, rainfall, drainage, fertility, temperatures and shade, and juxtapose themselves in time and

space accordingly. Canterbury has a broad range of habitat opportunities, stemming especially from its broad ranges of landforms and climates. Quite subtle site differences can have a strong bearing on what species prevail where. Plants often establish though a successional process, some species are tough pioneers capable of prospering under exposed conditions, others require a protective framework of associated species. Composition is rarely static, plant associations at any place can change with time, with additional species recruiting and others dropping out. Interdependence can occur at unseen levels, mycorrhizal and faunal associations can be pivotal in determining the health and survival of certain plant species.

Differences also occur at the genetic level, with plants at each site evolving local characteristics reflecting local selective pressures. For some species, like kōwhai *Sophora microphylla*, this has led to quite distinct local forms. Each remnant provides a vignette-like representation of the former vegetation patterns at that particular site—at both species and genetic levels. Each is subtly unique, and if we are to truly respect and protect their ecological integrity then we need to avoid actions that might compromise them.

If we are to do any planting, the species selection, placement and timing needs to be very accurately managed. It can be argued that non-local native species or provenances are just as problematic as exotic weeds, as any such plant simply takes up space and resources that might otherwise be occupied by a representative local species. This can be especially problematic if the non-local species is fecund, as their progeny can occasionally become aggressive volunteers. At least non-local species can usually be identified and removed, however if they hybridise with local species or are otherwise difficult to distinguish then they can be very difficult to manage. The North Island lacebark *Hoheria sexstylosa* has caused major problems in several South Island sites, volunteering aggressively and hybridising with the local *Hoheria angustifolia* where present, all at the expense of representative local species.

The practice of restricting plant selection to local provenances goes some way to addressing the issue. However the presence of a species at one locality does not necessarily mean that it is suitable for a nearby locality, as the two sites may have quite different habitat characteristics. Further, the importance of selecting local provenances is inconsistently recognised and applied. Some nurseries, advisors and planters are keen advocates whilst others are ambivalent. The ideal provenances are not always available when wanted, and substitution with alternative species or provenances is not uncommon. There is often a temptation to purchase plants on price rather than provenance, as we can get greater numbers from cheaper lines, allowing us to achieve greater coverage."

TRIP REPORTS

9 June 2018: Island Bay

1. Paekawakawa Reserve

We met Jennifer Bennett and Max Beauchamp, trustees of the Island Bay Natural Heritage Trust at the Paekawakawa Reserve entrance, 46A Derwent Street. Jennifer gave us an interesting briefing about the history of the Reserve. In summary, Robert Logan's vision, the drive, passion and perseverance from the Island Bay Natural Heritage Trust, and financial support from the Island Bay community and Gareth Morgan, resulted in the land being purchased from a property developer in 2006 and protected in perpetuity by a QEII National Trust Open Space Covenant. Restoration planting commenced in 2013 and the site is successfully regenerating.

After Jennifer's briefing, we botanised along sections of Max's Zigzag track, Robert's Path and Jennifer's Track. The Reserve is characterised by regenerating, semi-coastal forest. Paekawakawa means 'the place of many kawakawa' and as this suggests, we saw an abundance of kawakawa (*Piper excelsum* subsp. *excelsum*) in the understorey. Other dominant native species included māhoe (*Melicytus ramiflorus* subsp. *ramiflorus*), karamu (*Coprosma robusta*), ngaio (*Myoporum laetum*) and taupata (*Coprosma repens*). Toatoa (*Haloragis erecta*) was also common along the track edges.

Weed control and planting in the Reserve are continuing. Each year 500-600 native plants are planted, including species such as makomako (*Aristotelia serrata*), flax (*Phormium tenax*), tī kōuka (*Cordyline australis*), koromiko taranga (*Veronica parviflora*), mataī and kahikatea seedlings, ramarama (*Lophomyrtus bullata*) and wharangi (*Melicope ternata*). A planted, thick-leaved mahoe (*Melicytus crassifolius*) was seen at the Derwent Street entrance to the Reserve; this species is an At Risk (Declining) coastal native shrub that is infrequently observed in Wellington.

Melicytus crassifolius. Photo: Jeremy Rolfe.

After an interesting morning spent in Paekawakawa Reserve, during which we added 85 species to the plant list compiled in 2009, a small group continued onto Oku Street Reserve.

2. Oku Street Reserve, Island Bay

This 8-ha reserve, located on the headland between Island Bay and Owhiro Bay, comprises planted and regenerating coastal vegetation. We walked to the lookout area overlooking Owhiro Bay and Sinclair Head and were joined by Tom Lines,

who shared the story of the reserve with us. In brief, following arson on Oku Hill in the 1980s and local opposition to proposed development of the area, the area became a reserve and planting began in 2003 on the ridge crest to beat the karo (*Pittosporum crassifolium*) invasion. Efforts were hampered by a fire on the summit, however revegetation continued and the rate of planting increased from 500 plants per year up to 2000 plants per year due to the Honda Fund providing $7 for every car sold by Honda. Today, the area is flourishing and regenerating well with the help of continuing planting efforts.

During our reconnaissance, dominant species observed included taupata, koromiko (*Veronica stricta*), ngaio, māhoe, tauhinu (*Ozothamnus leptophyllus*) and akiraho (*Olearia paniculata*). In some areas, trees are now up to 15 m tall. Highlights included seeing some large thick-leaved māhoe and several northern rātā (*Metrosideros robusta*) planted in partnership with Project Crimson.

Participants: Helen Baggaley, Paul Blaschke, Alastair Burton, Gavin Dench, Carolyn Dimattina, Steve Doole, Chris Horne (co-leader), Harry Livesey, Richard Parfitt, Mick Parsons, Karin Sievwright (scribe/co-leader), Sunita Singh, Helen White, Sophie Williams (and children Alfred and Matilda).

7 July 2018: Manawa Karioi Reserve

Eleven people braved the cold showery weather and were rewarded with a largely clear day for their exploration. Manawa Karioi is easily accessible from Danube St or Rhine St, Island Bay. Although privately owned by the Tapu Te Ranga Marae Trust, it is publicly accessible. As one of Wellington's earliest restoration projects, and one which has been undertaken with ecological integrity from the outset, it is worth botanists' attention and has recently been included in a comprehensive Waikato University study of urban forest restoration sites across NZ.

We traversed the main tracks in the northern part of the reserve and spent most of our time in two gullies where a range of restoration plantings have been concentrated. We had the benefit of an early (1992) species list compiled by Maggie Wassilieff, and a comprehensive up-to-date list compiled by Pete Russell. The latter included a vast list of plant pests and other adventive NZ native and introduced species, indicating the size of the task any reserve manager hoping to undertake serious ecological restoration in a city suburb must undertake.

We inspected and discussed the range of species planted. In recent years Manawa Karioi has enriched the early planted successional species such as ngaio, *Veronica parviflora*, *Coprosma* spp, puka, kawakawa, māpou etc., with small numbers of later successional species including tawa, kohekohe, northern rātā, porokaiwhiri, *Sophora* spp, black maire, and the podocarps rimu, mataī, miro, kahikatea and tōtara, plus a few vines including kiekie and puawhānga. All species planted since the start have been locally eco-sourced.

Puawhānga *Clematis paniculata* flowering in Manawa Karioi, August 2018. Photo: Pete Russell.

We were pleased to see the range of planted species that are now freely regenerating, including tōtara, ngaio (very prolific and probably now the most significant forest canopy dominant), kōwhai, and many smaller broadleaved trees. We also saw small apparently regenerating puawhānga (now flowering, see photo), and a few planted swamp maire which are doing well. Thanks to Eleanor who collated the species observations which included several additions to the list, including six fern species. We also observed for the first time *Coprosma areolata* which may well have self-introduced from Tawatawa Reserve across the ridge.

Non-local natives such as karaka, karo, lacebark and five-finger hybrids are also thriving, and we discussed weed control priorities, which Manawa Karioi are now reassessing. Our pick of the most urgent control priorities included climbing asparagus, wild ginger, Darwin's barberry, flowering cherry, privet and karo. With the exception of karo, these are all of relatively limited distribution in the reserve. We felt that generally the reserve was in good condition with fewer weeds impeding native succession than in comparable Wellington reserves.

Participants: Paul Blaschke (leader/scribe), Eleanor Burton, Gavin Dench, Michelle Dickson, Richard Grasse, Kate Jordan, Rodney Lewington, Russell Poole (Palmerston North), Peter Russell (Manawa Karioi group), Sunita Singh (co-leader), Xavier Warne.

14 July 2018: Te Mārua Bush workbee

We planted some replacement trees, weeded, then cut 'light wells' in the fast-closing canopy of the young trees in our newer plantings. Growth has been amazing since the unusual October–December drought. It caused losses of seedlings and fruiting throughout the area. Some species flowered then shed their fruit, and some leaves, in the drought, and others did not flower at all. Luckily the weather then produced ideal growing conditions, and a long hot summer with nicely spaced rain. Trees then grew well, and seeds from the previous year germinated, replacing those which had died during the drought. It is pleasing to see so many self-sown tōtara, mataī and kahikatea seedlings. Black maire seeds are not often germinating, and the adults will not produce fruit this year. Black maire that we planted into the first of the new plantings are now big and bushy, and have reached the top of their part of the canopy. Let's hope that there will be more seed-producing examples to replace the several which have blown over, and those in the original bush which are not looking healthy.

Many of the *Veronica stricta*/koromiko and *Coprosma robusta*/karamu are reaching the end of their short but useful lives as shelter for slower-growing, longer-lived species. We cut back much of the old growth and dead branches to let more light through to the emerging seedlings. Some of the earlier-planted tōtara, mataī, kahikatea and black maire, are now 3–4 m high, and bushing out well. We laid the prunings on the ground to protect the seedlings from being dug out by blackbirds.

The planted strip beside the pony club's paddock is well grown, and the canopy mostly closed. We planted three replacement plants in the most recent planting area in the northeast corner by SH2. Growth here is slower than in more sheltered areas, nevertheless plants have done well in this stony site, exposed to the northwest winds. Self-sown mānuka is establishing well despite the rocky substrate and rank grass.

We collected a few bags of rubbish, but nothing like the large number of bags we usually found each workbee in earlier years. Very little rubbish gets past the dense growth along the boundary fences. We thank the GWRC ranger who kindly visited to collect our rubbish bags.

Participants: Heather Blissett, Kim Broad (GWRC), Barbara Clark, Trudi Bruhlmann, Gavin Dench, Michele Dickson, Chris Horne, Lea Robertson, Allan Sheppard, Graeme Sheppard, Sunita Singh, Co-leaders/scribes: Glennis Sheppard and Sue Millar.

Kim Broad, Biodiversity Officer, GWRC responded to our report as follows:

Thank you for the report and thanks to all who participated in the workbee. I will wait until after the next workbee before getting our staff to do some follow-up weed work. There doesn't appear much for them to do now apart from a sweep round the edges looking for *Tradescantia*, montbretia and *Alstroemeria*. I was very heartened by the few weeds present now and the regeneration that you describe in the report. Everything is looking very good.

One thing I must do is ensure that we have continuing possum and rat control. In the past we have relied on OSPRI's TB-free work, but I think we should install and service a couple of bait stations ourselves for security.

Ngā mihi, Kim Broad

4 August 2018: "Post Office Bush", Quartz Hill Road, Makara

A potentially drizzly day turned into a worthwhile botanical foray with a good turnout for this small but interesting, and now hard to access DOC Conservation Covenant No. R27106. The 135-ha covenant comprises the two small blocks named "Post Office Bush", which we botanised, either side of the former Post Office Radio Station village, plus a much larger block which we did not visit in the valley of Opau Stream to the west.

Before our visit, Sunita Singh had extensive correspondence with Meridian Energy Limited's Sacha Stevens (Team Coordinator: Wind and Maintenance Development) to arrange for permission to access the area. Two members of the group that would be visiting (Kat de Silva and Lynne Pomare) attended an induction on site before the field trip, conducted by Site Manager, Darren Smith, who was most welcoming and generous. He explained that Pat Mahoney would be in the office on the Saturday to sign us on and off the site, to answer any questions and deal with any events that might arise. What had seemed like a bureaucratic nightmare proved to be a very enjoyable, seamless experience on the day, with many of us choosing to make use of the mess room for comfort and hot drinks at lunch-time. We thank all these members of the Meridian team for making this such an interesting visit.

The site is part of Makara Farm, now owned by Meridian Energy as part of the West Wind wind-turbine power station, with the surrounding pastoral area farmed by tenant farmers, Brian Drake and his son, Peter, to whom thanks are also due. We had been reminded that this is a working farm, and that we must respect that fact so that farming operations would not be impeded. Several farm vehicles passed along the road during the time we were there.

Access to the site is controlled by Meridian Energy with a control gate at the start of Quartz Hill Road which is now a private road, and at this time, being lambing season, there was also a second control gate before that on Opau Road. After signing in at the Meridian depot, we botanised the north block's southern bush edge along Quartz Hill Road as far as a cattle-stop, which was as far as we were permitted to go along the road. An old pine shelterbelt lines the western and most of the southern edges of the covenant bush area. Along the road edges there were numerous garden escapes and rubbish, remnants of the former Post Office housing. Leon gave us a tutorial on *Solanum nigrum* ID following Jeremy Rolfe's recent talk to BotSoc, and also noted *Trichomanes endlicherianum*, and *Adiantum fulvum* amongst the seven fern additions to the list.

At the top of the southern block, the parallel purple pipes laid out

across the forest floor are part of Meridian's treated waste-water disposal system—historically this continues from the Post Office village days for effluent management and predates the covenant's establishment in 2000. We then traversed the southern block, downhill to the north-east, to a culverted crossing of a true left tributary of Makara Stream near an old village effluent treatment pond, then followed an old farm track back to the main depot building. This bush block had extensive kohekohe canopy and associated kohekohe seedlings, along with some interesting fungi and numerous lianes. Fungi included waxcaps, earth star, coral, *Scytinopogon pallescens*, and *Gloiocephala xanthocephala*.

We lunched in the Meridian building and were grateful for the use of their facilities. Then most of the group headed for the summit of the northern block, botanising a loop from the car-park. We crossed the meandering tributary twice, and initially followed a flagged bait / trap line (although there was no sign of further pest control). On the summit we saw a fine miro and stunted kohekohe. During the return we passed two substantial kahikatea that were visible from the Meridian building. We finally found the sought-after *Syzygium maire*/swamp maire in the north block not far from the road edge.

Syzygium maire. Photo: Jeremy Rolfe.

We saw several substantial planted kauri from the road edges, and made about 25 additions to the 1998 BotSoc list. Although we saw two DOC200 trap boxes, these appeared to be out of use. DOC have since confirmed that there is no pest management regime in the covenant.

Participants: Eleanor Burton, Gavin Dench, Michele Dickson, Rosie Doole, Pat Enright, Richard Grasse, Richard Herbert (co-leader), Chris Horne, Kate Jordan, Rodney Lewington, Mick Parsons, Leon Perrie, Lynne Pomare (co-leader/scribe), Russell Poole, Hugh Robertson, Lea Robertson, Jo Schofield, Lara Shepherd, Sunita Singh, Carol West, Helen White, Julia White.

1 September 2018: Wainuiomata River West Branch

The Wainuiomata catchment contains one of the largest areas of un-logged lowland podocarp forest in the lower North Island. It is regarded as being nationally representative of this forest type. The Wainuiomata River West Branch is at the centre of this pre-european podocarp-broadleaf forest. On the valley floor are gigantic emergent rimu, northern rātā, miro and mataī, soaring above a canopy of kāmahi, hīnau, rewarewa, kahikatea, tawa and maire.

A huge mataī covered in bryophytes. Photo: John van den Hoeven.

The first official botanical survey in the catchment was completed in 2002 by Mitcalfe & Horne, followed up by Wellington Botanical Society trips in 2003, 2010, 2011 and 2013. This time, we had 32 members who squeezed into seven 4WD vehicles to drive in convoy from the Water-Treatment Plant car-park to the start of the west branch track. This area is not accessible to the public, except when guided tours are led by GWRC, so we were privileged to visit this area of pristine forest.

Upon arrival, we split into two groups, with Leon leading an introductory session on botanical identification for the many who were

Botanical ID session. Photo: Kat de Silva.

keen to learn ID tricks and tips; the remainder carried on ahead eagerly botanising either side of the track.

We saw a huge diversity of shrubs, ferns, and lianes, plus some especially grand liverworts, mosses and fungi. We saw one individual of *Coprosma rubra*, a bushy, small-leaved, wide-angled shrub that is rare within the region.

Coprosma rubra. Photo: Pat Enright.

We saw a flowering *Pseudowintera axillaris*, a species within the most primitive families of the flowering plants (Winteraceae), and whose flower parts are relatively un-specialised.

Flowering *Pseudowintera axillaris*. Photo: Kat de Silva.

We found the largest moss in the world, *Dawsonsia superba*, growing in dense colonies along the stream bank—it can grow to 60 cm tall.

Along the way our boots were cleaned at the half a dozen small streams we crossed. People who wore ankle-high waterproof tramping boots were out of luck, with water levels about calf-high.

We were fortunate to have a stunningly sunny day, and for lunch we chose a great warm spot speckled with sunlight, next to towering giants thousands of years old.

On our return, we were fortunate enough to be taken to the GWRC exclosure plot which was installed in 2003. This is a control plot, where no ungulate browse can occur. It is used to compare data collected from the ungulate browse monitoring in other areas of the catchment.

One of several beautiful opportunities to get our feet wet. Photo: John Van den Hoeven.

Dawsonia superba.
Illustration: Eleanor Burton.

We had 181 species on the plant list before we began, and added five more species, making a total of 186 for the area. These were: *Piper excelsum* subsp. *excelsum*, *Loxogramme dictyopteris*, *Myrsine salicina*, *Euchiton japonicus* and *Plantago raoulii*.

The only downside of the day was seeing the wide-spread pig-rooting throughout the remnant forest; sometimes the churned-up areas were as far as the eye could see. Urgent action is needed to reduce the numbers of wild pigs in this area.

Severe pig rooting throughout.

We thank GWRC ranger Ricky Clarkson for granting permission to visit this special place, and Dion Ngatoro for assisting us gaining access on the day. We also want to thank GWRC staff Kim Broad and Owen Spearpoint for helping our large group getting through the many gates with locks and pass-codes. We wish the council well with its continuing work in this mainland island restoration project.

Participants: Kim Broad, Eleanor Burton, Owen Calder, Gavin Dench, Kat de Silva (leader/scribe), Michele Dickson, Aaria Dobson-Waitere, Pat Enright, Jenny Fraser, Ian Goodwin, Jill Goodwin, Richard Grasse, Andrew Hawke, Chris Hopkins (co-leader), Aman Hunt, Heidi Hunt, Ellen Irwin, David Lee, Pat McLean, Pascale Michel, Chris Moore, Sarah-Louise Myers, Mick Parsons, Leon Perrie, Russell Poole, Lea Robertson, Michael Sanderson, Lara Shepherd, Sunita Singh, Owen Spearpoint, Ianto Stephens, John Van den Hoeven, Carol West.

Katherine de Silva

Wellington Botanical Society

Te Rōpū Manāki i Ngā Tamariki a Tāne, o Te Whanganui a Tara

Membership application

(For new members, **NOT** for renewal of existing membership)

I wish to join the Society ☐

My name Mr/Mrs/Ms/Dr ..... Phone (.....) ..... (h)

My address ..... Phone (.....) ..... (w)

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I would like to receive my newsletters by e-mail as a PDF: YES / NO (Delete as appropriate)

My/our e-mail address .....@.....

Signature ..... Date:..... / ..... / .....

The membership year is from 1 July to 30 June. Dues received after 1 May will be credited to the following year.

Membership fees for the year ended 30 June 2019 are:

Type of membership: Ordinary $35; Country $30; Student $10; Group / family $40.

We welcome donations to support research into NZ native plants and to the Jubilee Award Fund.

Please make your cheque payable to Wellington Botanical Society Inc, and send it with this form to:

Wellington Botanical Society Inc., PO Box 10 412, Wellington 6143

My cheque is enclosed for	Ordinary membership	$.....
	Country membership	$.....
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	TOTAL	$.....

Alternatively you may pay direct to the Society's bank account 020536 0017812 00

and e-mail this completed form to the Treasurer at harlea@actrix.co.nz

Authority to release your name, address and phone number to other members of the Society.

The Society holds the names and addresses of all members to use for post-outs of newsletters etc.

The committee sees benefit in circulating the membership list to all members. This is done by many societies to enhance social interaction as well as being of practical value.

Under the Privacy Act the circulation of names on such lists requires the approval of the individual members.

If you are agreeable to your name and address being on the circulated list, please sign the authorisation below and return it with this membership application.

I agree to my name, address and telephone number being on the membership list to be circulated to members of the Wellington Botanical Society. I understand that this list is to be used only by members, and that the circulated list will include the caveat that the list is for social and society use and is not to be used for any other purpose. Specifically the list is not to be used for marketing, soliciting or political purposes.

Name..... Signed..... Date / /

Name..... Signed..... Date / /

If you do not agree, it would assist processing if you could please put a line through paragraphs above and return the form unsigned.

Wellington Botanical Society – Summer field trip

In on 25 January 2019, out on 1 February 2019.
Based at Bannockburn Camp, near Cromwell

Completed forms and deposit to be in on, or by, 20 November—the last BotSoc meeting of the year.

Name: Address:	
Home phone:	Mobile:
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Emergency contact: Relationship: Home address of contact:	

Travel and accommodation arrangements:

Please indicate which evenings you intend to be at Bannockburn Camp:	☐ 25 Jan ☐ 26 Jan ☐ 27 Jan ☐ 28 Jan ☐ 29 Jan ☐ 30 Jan ☐ 31 Jan
Type of accommodation required:	☐ Bunk accommodation (in 2 x 20-bunk huts with 2 single beds per bunkroom), $20/person/night. ☐ Tent site $20/person/night. ☐ I/we will be making my/our own arrangements.
Please specify your mode of travel to Bannockburn, e.g., public transport, own car, or as a passenger with someone else.	
We are exploring the option of hiring a van(s) from Queenstown airport. Please indicate if you are interested but note that we will proceed only if there is enough interest to make it a viable option.	☐ Yes ☐ No
If you are going with your own car, how many additional passengers could you take:	☐ None ☐ 1 ☐ 2 ☐ 3 ☐ 4
If you are taking a car, will it be available for day trips at Bannockburn?	☐ Yes ☐ No

Payment:

Estimated cost per person: $400. (This applies both to those who are bunking or camping.)
Please check one of the following boxes and make payment as specified:

☐ By Cheque: please make cheque out to Wellington Botanical Society and send it with the completed Registration Form to: Lara Shepherd, 26 Thane Rd, Roseneath, Wellington 6021.

☐ By Electronic Funds Transfer: please make the deposit to the Society's account: **020536 0017812 02** citing your name(s) in the particulars/reference boxes of the payee section.

Notes for e-mailing the completed Registration Form:

1. Download the form from the bottom of the BotSoc Trips web page at: (To fill in the form's check boxes", double left click on it and click on the "Checked" button.) http://www.wellingtonbotsoc.org.nz/trips_2019.html#camp
2. E-mail to Lara Shepherd at lara.shepherd@tepapa.govt.nz

Notes for posting the completed Registration Form:

1. Print off a copy of the form from the newsletter, or download from the above web site.
2. Fill in as appropriate by putting an X in the required check boxes.
3. Post the form with your cheque to Lara Shepherd's above home address. (Cheque not required if payment already made by Electronic Funds Transfer.)

Deposit: $400.00.

At the end of the trip, depending on the final cost, you will be sent an invoice (or a refund) for the full cost less your original payment.