



President's report November–December 2023

Once more it is time to send greetings of goodwill to all members and to thank the committee and all those of you who led field trips, including the summer camp. Thanks also to Jeremy Rolfe for his work preparing the newsletter for publication. We have had few interruptions to our programme for which I am thankful, and our new policy of postponing field trips to the following Saturday if rain prevents play is largely responsible for this.

The committee particularly wishes to thank Helen White for her hard work managing our finances and memberships for the past year, juggling this with caring for baby Olivia and returning to work. Paul Bell-Butler will be relieving her of the Treasurer's portfolio from December and I have taken on the Memberships Secretary work in addition to my duties as President.

You may have noticed that you did not receive an email before the evening meeting on 20 November. This is one of many things that we have not been able to do due to a lack of people prepared to help either on the committee or from outside the committee. The Zoom link is not new every month so you can look for the link in your previous emails or look it up on the Facebook Group, *Wild Plants of Wellington*. This is a public group with over a thousand members where we post details of our programme including the Zoom link. You do not need to join Facebook to view the page. Also, on this Facebook Group you can find out about other events relating to botany in Wellington and beyond.

Volunteers are vital to the long-term survival of the Wellington Botanical Society. One way you could help is to offer suggestions for field trips and take on trip-leader responsibilities for trips. We on the committee, and Programme Manager Sunita Singh in particular, would very much appreciate such support. We are only a phone call away.

Tom Mayo is busy collating registrations for the summer camp at Taylor Lodge, Ruapehu (in: 20 January 2024, out: 27 January 2024). When making payments online please remember to put your names and CAMP REG in the statement details section. This saves so much time following up on anonymous payments. Once more we are offering paid places (excluding travel expenses) to three students/apprentices.

Finally, a big thank you from me to everyone who attends evening meetings in person. I know how important it is for members to have the option of attending via Zoom, but it is also vital that there are people in the room for our guest speakers to see and to talk to. And if you are coming the doors open at 7pm so there is plenty of time to chat, buy a plant, read some brochures and share some supper before the meeting starts.

Happy holidays.

Frances Forsyth, President

What on earth?

Do you know what this photo depicts? You can find the answer at the bottom of page 4. Give yourself an extra pat on the back if you could identify both the feature and the species. It will likely be easier for people viewing it in colour—perhaps this is an extra incentive to subscribe to the digital PDF version of the newsletter instead of the printed version.



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.

BotSoc on Facebook

<https://www.facebook.com/groups/322939557873243/>

This is the unofficial page for Wellington Botanical Society.

Meetings

BotSoc meetings are usually held at 7.30 p.m., third Monday each month at Victoria University, WN – Lecture Theatre MYLT101, ground floor, Murphy Building, west side Kelburn Parade. Enter building 20m down Kelburn Pde from pedestrian overbridge. No meetings December and January. Meetings are in person and usually available on Zoom.

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, and sometimes Easter and the first weekend in December.

DEADLINE FOR COPY FOR NEXT ISSUE – 20 March 2024

Articles may be edited for clarity and length

Wellington Botanical Society

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Annual subscription:	ordinary \$35; country \$30; student \$10; joint / group / family \$40.		

Send your subscription to our bank account 020536 0017812 00.

Particulars: Name

Code: Membership type

Reference: amount of included donation

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

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 Sunita Singh, PO Box 10 412, Wellington 6140, ph 387 9955.

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.

Booking on field trips: Give the leader/s your cell-phone number so that we can contact you if you are running late.

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 rain-coat (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, notebook, pen, pencil, mobile phone, wallet. Optional: walking pole, clipboard, map or park brochure, camera, binoculars, hand lens, sun-block, sunglasses, insect repellent, whistle, toilet paper.

Field trips—overnight

Field trips usually last two days; at Easter, three days. We may be based at a campground 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.

Postponing field trips

The committee has decided to postpone field trips affected by bad weather or other reasons, rather than to cancel them. Generally, they will be postponed until the following Saturday. However, this will not always be possible. You must register with the trip leader and provide your phone number. If the trip is postponed you can then be contacted and told about rescheduling arrangements.

Health and safety

The leader will bring BotSoc's comprehensive first-aid kit, a topographic map, a mobile 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 windscreen 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 windscreen 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, then send it to the editor.

When leading a field trip into a regional park please tell the park ranger beforehand.

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 near Victoria University's Murphy Building Lecture Theatre M101:

TO MEETINGS

No. 18e Miramar: 7.05 p.m. from Karori Park, 7.21 p.m. @ VUW.

No. 18e Karori: 7.00 p.m. from Miramar – Darlington Rd, 7.43 p.m. @ VUW, or 6.00 p.m. from Miramar, 6.43 p.m. @ VUW.

No. 21 Courtenay Place: 7.01 p.m. from Karori Mall – Beauchamp St, 7.13 p.m. @ VUW.

No. 21 Wrights Hill: 7.00 p.m. from Courtenay Place – Stop A, 7.08 p.m. @ VUW.

No. 22 Mairangi: 7 p.m. from Wellington Station – Stop C, 7.08 p.m. @ VUW.

No. 22 Wellington Station: 7.02 p.m. from Norwich Street, Wilton, 7.17 p.m. @ VUW.

Cable Car: 00, 10, 20, 30, 40, 50 minutes past the hour from Lambton Quay terminus to Salamanca Station. Ten-minute walk to Murphy Building lecture theatre M101 at VUW.

FROM MEETINGS

No. 18e Miramar: 8.05 p.m. is the latest bus from VUW, so catch a no. 21 or No. 22 to CBD—see nos. 21 and 22 below—then a no. 2 to Miramar/Seatoun.

No. 21 Courtenay Place: 9.13 p.m. or 10.13 p.m. from VUW.

No. 22 Wellington Station: 9.38 p.m. or 10.38 p.m. from VUW.

Cable Car: No service after 8 p.m.

For further information ring Metlink, 0800 801-700.

NOTICES

Brownsey, Patrick John (Dr) 1945–2023

Patrick Brownsey, long-time curator at the WELT herbarium of the Museum of New Zealand Te Papa Tongarewa, has died after a short illness. He was with his family and very loved. The family have held a private funeral, with the intention of a public memorial in the near future. Pat was expert on the ferns of New Zealand and the southwest Pacific, a prolific collector especially of mosses, an advocate for the museum and its people, and a friend and mentor to many.

Te Papa's Botany team (c/o leon.perrie@tepapa.govt.nz)

New members

We are keen to welcome more people to the delights of botany via BotSoc. If you know someone who might enjoy our field trips, newsletters, bulletin and informative meetings, please encourage them to join. Give them our web site address, then tell them that there is a membership application form at the back of our newsletter.

Membership Secretary

Events

2nd Saturday each month, except January. Ōtari-Wilton's Bush – Plant Care. **Meet:** Te Marae o Tāne Visitor Centre, 160 Wilton Rd, Wilton at 9:00 a.m. **Bus:** No. 14 Wilton bus, departs Courtenay Pl 8.28, Molesworth St 8.36, alight Warwick St. Planting: winter months: weed clearance other months.

Wilbur Dovey. Landline 499 1044. Mobile 027 499 1044.

Submissions called for

15.12.23. Natural Resources Plan for the Wellington Region – (Plan Change 1) – part standard plan change – part a freshwater planning instrument. Focuses on management of freshwater in Te Whanganui a Tara & Te Awarua o Porirua – amendments to air quality rules – and to the beds of rivers rules – new sites with significant indigenous biodiversity values; Plan Change 1 document & associated Section 22 report.

• www.gw.govt.nz/nrp-pc1 – consultation; hard copies from GW offices: Cuba St & Masterton offices & all libraries.

Early 2024. Wellington City Council Long-Term Plan 2024-2034.

• wcc.govt.nz

Evelyn Munster 20.11.1924–12.2.2023

We are sad to report the death of Evelyn, a long-term member who enjoyed BotSoc's publications and activities.

Grants awarded

Student grants

- **Joe Dillon** is investigating the effects of climate change on twenty-five native orchid species.
- **Rachael Lockhart** is studying the response of functional traits in invasive hawkweed species to drought in New Zealand's tussock grasslands.
- **Riccardo Ciarle** is studying loss of dispersal ability in endozoochorous plants on remote oceanic islands.

Jubilee Award

- **Samiksha Patel** for research into the taxonomy, threats and conservation of the *Senecio matatini* complex.

Additional grants

- **Jane Gosden** to assist in the publication of her *Celmisia* field-guide book.
- **Debra Wotton** to continue her research.

Subscription reminder for the year ending 30 June 2024

Almost fifty members of BotSoc have yet to pay their subs as we approach the half year mark.

Pay now, be in before Christmas and start the New Year with a clean slate!

- Ordinary membership \$35
- Country \$30
- Joint/family \$40
- Student \$10

Please pay direct to BotSoc's Bank Account—02 0536 0017812 00—including your name and Sub20 as Reference.

Treasurer

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



'What on earth?' revealed

Dense leaf hairs of the hairy pennywort, *Hydrocotyle moschata* var. *moschata*. Compare this with the photo of *H. moschata* var. *parvifolia* at <https://www.nzpcn.org.nz/flora/species/hydrocotyle-moschata-var-parvifolia/> which has sparse flattened hairs.

Photo: Jeremy Rolfe.

FIELD TRIPS & EVENING MEETINGS

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.

DECEMBER 2023 – MAY 2024

Thursday 7 & Saturday 9 December

Rātā walk, Lower Hutt

A 4.5 km stroll in Lower Hutt to see up to four species of *Metrosideros* in flower and other native trees in the streets and gardens. The walk begins and ends at Woburn Station, so public transport use is encouraged. **First walk:** an after-work event on Thursday 7 December. **Meet:** Car park east side of Woburn Station. **Thursday:** 6 p.m. **Train:** Hutt Valley line – 5.35 p.m. Wellington to Woburn. Do not catch the express. **Second walk:** **Saturday:** 9.30 a.m. **Train:** 9.05 a.m. Hutt Valley line Wellington to Woburn. **Map:** Street map. **Leader:** Kate Jordan, ph 027 899 0018, e-mail kateljordan@gmail.com

Saturday 10 & Sunday 11 February: Field trip

Ruamahanga Catchment, Wairarapa

NOTE: SECOND SATURDAY

Day 1: Lower Ruamahanga. Botanise retired riparian forest bush remnant beside Ruamahanga River. The owners wish to restore the once-grazed remnant; recently fenced and planted around. *Korthasella salicornioides* is in vicinity. Wetlands nearby - bring gumboots! **Meet:** Featherston 10 a.m. along SH53 before rail crossing. Drive in convoy towards Martinborough and the site. The farmer will decide final route to site. **Bring:** water, sunhat, boots, lunch, thermos, hand sanitiser, sunscreen. Botanising area is flat but we may need 4wd's to access depending on weather. **Camp:** Saturday night at Greytown or Carterton campgrounds. **Dinner:** Bring your own or we can have a pot-luck. **Breakfast:** Bring your own.

Day 2: Tunanui Farm. Botanise two QE2 covenants and a large seepage wetland. The covenants are mature tawa/podocarp forest; the wetland is retired farmland, The Mākara River and its tributaries are in the Huangarua catchment. Visit seepage wetlands on hillsides and large areas of regenerating scrub/shrubland. **Forest type:** mixed beech forest plus podocarp broadleaved forest on valley floors. Good foot access to most of farm via 4wd tracks. Relatively sheltered; valley faces west on margins of Tararua Range. **Depart:** Carterton 9 a.m. Drive in convoy north up SH2 to Masterton and at junction with Ōpaki-Kaiparoro road north of Masterton, take turnoff to Mauriceville. **Meet:** farmer at 10.00 a.m. Both botanising sites are isolated and remote however the Tunanui sites are steep terrain. As we have been kindly allowed to botanise these private properties, all trip members are expected to submit to the trip leader a list of the plant species they have identified. **Limit:** 20 people. **Bring:** spare clothes, lunches, thermos, water, scroggin, boots with good ankle support, waterproofs (parka & leggings), warm clothes including hat, longs, gloves. If the forecast weather is wet or too windy we will cancel on the Friday before. **Leader:** Owen Spearpoint. Mob 027 285 8083 Email owen.spearpoint@gw.govt.nz ;

Monday 19 February: Evening Meeting

What it takes to save NZ's most threatened orchids from extinction

Speakers: Carlos Lehnebach, Curator of Botany, Te Papa, Wellington; Jennifer Alderton-Moss, Plant Conservation Researcher, Wellington City Council; Karin van der Walt, Conservation and Science Advisor - Ōtari Native Botanic Garden. We will talk about our research at Ōtari-Wilton's Bush and Te Papa aimed at saving some of our most threatened orchids from extinction. We will cover aspects related to their pollination, seed collection and germination, and the methods we use to isolate and identify their fungal partners, which are indispensable for seed germination. We will focus mostly on threatened species found locally, but there will be some examples from orchids further afield (e.g. the Auckland region, Waikato & North-West Nelson). Our talk will highlight challenges, successes and the lessons we have learnt while trying to save some of our less studied plant species.

Saturday 2 March: Field trip

Paraparaumu Scenic Reserve

Botanise extensive areas of regionally rare coastal and lowland kohekohe/tawa forest and kahikatea/pukatea forest. Extensive bait lines through the area provide tracks which are likely to be rough so boots and poles are recommended. Find out about the brown mudfish in local streams. **Meet:** 9.35 a.m. Paraparaumu Station car park from where we will travel in convoy sharing transport or 10 a.m. main reserve carpark, just before 115 Maui Pomare Rd in Nikau Valley. **Train:** Dep 8.44 a.m./Arr 9.38 a.m. on Kāpiti Line from Wellington Station to Paraparaumu Station. Map: NZTopo50-BP32 Paraparaumu. Co-leaders: Jenny Fraser JennyJFraser@gmail.com 027 358 007; Pattern Reid, DOC Ranger/Kaitiaki, Biodiversity for Kāpiti/Wellington 027 289 256.

Monday 18 March: Evening Meeting

Disentangling the effects of deer and possums from those of natural disturbance in NZ's forests

Speaker: Peter Bellingham, Senior Researcher, Manaaki Whenua – Landcare Research, Lincoln. NZ's natural forests have been shaped in their composition and structure by natural disturbances. Some of these disturbances, such as past glaciation or the Taupō eruption, have been at vast scales, and others at much smaller scales. The resilience of natural forests to such disturbances over millennia is often reflected in different ecological strategies among tree species as forests develop after disturbance. Differences among tree species in growth rates, leaf chemistry and wood density reflect differences in response to changes in soil nutrient availability and light soon and long after disturbances. The recent settlement of NZ by people has brought new disturbances (such as fire) and many introduced, non-native plants and animals. Climate change is causing changes in the intensity and scale of some disturbances, such as cyclones and drought. Introduced mammals e.g., deer and brushtail possums, consume some forest trees and shrubs preferentially, yet their control sometimes does not result in the changes expected. In this talk, I will discuss the problem of disentangling the damaging effects of browsing by deer and possums from continuing natural change after disturbances and, in that context, where we can apply control of deer and possums to achieve maximum efficacy.

Saturday 6 April: Field trip

Ngā Manu Nature Reserve wetlands, Waikanae

Botanise Jack's Bush/Ngā Manu Bush—one of the largest and best examples of swamp forest within Foxton Ecological District. See a good example of sequences between wetland, swamp forest and dune-ridge dry forest. Wetland habitat is nationally rare; less than 8% indigenous cover remaining in Foxton ED. Contains significant specimens of swamp maire / *Syzygium maire*, kahikatea / *Dacrycarpus dacrydioides* and pukatea / *Laurelia novae-zelandiae*. **Meet:** 9.30 a.m. Waikanae Station north end car park from where we will travel in convoy sharing transport. **Maps:** Street map; NZTopo50-BP32 Paraparaumu. **Train:** 8.14 a.m. on Kāpiti Line from Wellington Station to Waikanae Station. **Co-leaders:** Andy McKay 027 555 653; Kate Jordan 027 899 0018 / katejordan@gmail.com.

Monday 15 April: Evening Meeting

Ecosourcing for resilience in a changing environment

Speaker: Peter Heenan, Senior Researcher – Botanist, Systematics, Landcare Research.

Ecosourcing seed of 'local genetic stock' has become unnecessarily restrictive. Very little is gained through restrictive ecosourcing of tree seed. We recommend that phylogeographic patterns and biogeographic boundaries be used to set nine broad ecosourcing regions and, within these regions, phenotypic adaptation to particular environments be used as a guide to seed selection. This more relaxed approach to ecosourcing will improve restoration outcomes through increasing species and genetic diversity, reducing the detrimental effects of inbreeding and promoting the genetic rescue of populations of threatened species. Examples of adopting an eco-evolutionary approach to ecosourcing are provided for the early-successional coloniser *Kunzea ericoides* and late-successional conifer species. The paper describing this research is 'open access' and the pdf is easily downloaded using the following link: <https://www.tandfonline.com/doi/full/10.1080/0028825X.2023.2210289?src=>

We recommend that you see this video before the talk. *Ecosourcing for resilience in a changing climate.* https://youtu.be/Hle3Pm_xowY?si=oSrojAMAcPLNPvyq

Saturday 4 May: Field trip

Matiu/Somes Island, Wellington Harbour

Botanise Matiu/Somes Island, an important predator-free wildlife refuge in Wellington Harbour. Cleared of large native trees in the past, the island has been the focus of revegetation plantings beginning in the early 1980s, including the planting of regionally threatened plant species. We will walk the loop track and explore the coastal vegetation near the wharf. **Meet:** 9 a.m. at Queens Wharf ferry terminal. Buy a return ticket. **Catch:** 9.30 a.m. ferry to the island. **Bring:** sufficient water and food as neither is available on the island. **Leaders:** Lara Shepherd: lara.shepherd@tepapa.govt.nz / 027 363 5854; Leon Perrie: leon.perrie@tepapa.govt.nz / 027 419 1378

Monday 20 May: Evening Meeting

Members' Evening

Share a pre-meeting bring-your-own supper: a flask of hot drink, cup and a small plate of 'nibbles' to be followed by a few speakers—limit 10 minutes/person. For a gold-coin koha, or even 'folding money', buy one or more of the books we put on display to help build up the Jubilee Award Fund which supports research on NZ plants. **Room** opens at 7 p.m. **Bring:**

- * your botanical slides and photographs taken on BotSoc trips. Slides on a USB stick—limit 20/person;
- * plant specimens to sell or to discuss;
- * favourite botanical readings, your paintings;
- * any spare botanical or other natural-history books you have and don't want any more to have them auctioned. Take them home if they don't sell;
- * botanical art—paintings, drawings, ceramics—to add to a memorable evening.

PUBLICATIONS

1. **Open Space. 106 11/23:** Kōkako collaboration; restoring Ōreti tōtara forest; Pāmu (was Landcorp) has 10,000 ha protected by covenants; some public access covenants; newly registered covenants; regional representatives – contact details; etc.
 - *QEII National Trust, 138 The Terrace, PO Box 3340, Wellington 6140. Ph 04 472 6626, info@qei.org.nz*
- 2a. **Liverworts. 1 p, A4. Rough rules; resources.**
- 2b. **Mosses. 1 p, A4. Rough rules; resources.**
 - Leon.perrie@tepapa.govt.nz
- 3a. **New Zealand Plant Conservation Network. e-newsletter No. 235 (11/23). File size: 8.4 MB.**
 - www.nzpcn.org.nz/site/assets/files/0/75/467/trilepidea_november_2023_final.pdf
- 3b. **Please tell NZPCN about any plant conservation news and events (Have you found a threatened plant? Are you undertaking a restoration project? Do you have plant stories, talks, planting days, field trips, etc.?) which you would like promoted nationwide? Email details to:**
 - info@nzpcn.org.nz.
- 4a. **Auckland Botanical Society. Newsheet 12/23.**
- 4b. **ABS Journal 2023 78(2).**
- 4c. **Nature in the City. ABS Bulletin 35 (2023). \$69.95 incl. p&p.**
 - aucklandbotanicalsociety@gmail.com
- 5a. **Botanical Society of Otago 2024 calendar. \$19.60 incl. p&p.**
 - johnknight.otago@icloud.com
- 5b. **BSO Newsletter no. 100.**
BrandtA@landcareresearch.co.nz
6. **Ecosourcing – by Peter Heenan.**
 - <https://www.landcareresearch.co.nz/news/new-guidelines-suggested-for-ecosourcing-seed/>
7. **Tieke. 10–11/23:** Various environmental topics; election 2023; etc.
 - *Environment & Conservation Organisations of NZ Inc. – eco@eco.org.nz*
8. **Gorge Gazette. 10/23:** Activities in Trelissick Park, Ngaio Gorge, Wellington.
 - *Trelissick Park Group. trelissickgroup@gmail.com*
9. **NZ Gardener's Native Plants Made Easy. Order your copy online:**
 - mags4gifts.co.nz/products/nz-gardener-native-plants-for-birds
10. **Whareroa Guardians Community Trust: Kāpiti Coast.**
 - *Google the name to read newsletters about the group's activities.*
11. **Native Insects of Aotearoa. Julia Kaspar & Phil Sirvid.**
 - Te Papa Press. \$27.
12. **Ōtari News & Views. 9/23:** Open Day 16/9; message from Carol West - trust chair; planting on big slip below Wilton Park; new track to the ancient rimu – Moko; *Dracophyllum sinclairii*; etc.
 - owbt.org.nz
13. **Zealandia – Te Māra a Tāne. 2022-2023 Highlights. A4, 22 p. Recovery of freshwater ecosystem following removal of perch—freshwater sponge "bloom"; challenge to status of karaka as a weed; science-based exotic canopy management plan; etc.**
 - www.visitzealandia.com/
- 14a. **Forest & Bird. 389, Spring 2023:** Centennial conference; Hauraki Gulf; proposed mine south of Punakaiki; Pūatahanui Wildlife Reserve; National Policy Statement for Indigenous Biodiversity now in effect; 10 ways to heal the earth; impacts of off-roading; role of children in conservation; rethinking Piopiotahi / Milford tourism; iwi-led Raukūmara Pae Maunga group wins Kōtuku Award for big project to improve health of Raukūmara Range forests – East Cape area; Part 3 of history of Forest & Bird; Rakiura / Stewart Island; restoring the Mercury Islands; Graham Petterson's 84 years promoting nature; tusk wētā; etc.
390, Summer 2023: controlling browsers; Zealandia's impacts; iwi-led conservation; future of nature conservation in climate emergency; control of cats; myrtle rust; native restoration of former pine forest; kiwi in the capital; wins in 2023; etc.
- 14b. **Every wetland counts – He Puipuiaki Ia Rohe Koreporepo. Brochure, A4, 4p.**
- 14c. **Making Room for Rivers. Tukua Nga Awa Kia Rere. Brochure, A4 8p.**
 - www.forestandbird.org.nz PO Box 631, WN 6140; ph 04 385 7374.
15. **Backcountry. Quarterly bulletin of Federated Mountain Clubs of NZ. No. 233 8/23:** Numerous articles on politics and conservation.
 - administrator@fmc.org.nz
16. **Wellington Natural Heritage Trust:** Owners of 55ha Long Gully Bush in valley of Silver Stream, a tributary of Karori Stream. The fenced native forest is protected with a QEII National Trust Open Space Covenant. Donations welcome.
 - wnht.org.nz
17. **NZ Native Orchids.**
 - nznativeorchidgroup@gmail.com

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

Ōtari update

Since our very successful Open Day we have been experiencing a heavy flowering season for many of the plants we look after as well as many trees in the forest. The *Clianthus maximus* / kōwhai ngutukākā / kakabeak from Tokomaru Bay has put on an amazing show.

Planting on the top part of the Wilton Park slip was completed after Open Day and is doing well. Fingers are crossed that these plants survive the summer that we anticipate is coming. A heavy flowering of tī kōuka / *Cordyline australis* is a good sign that we will be having a hot summer. Our new forest-weeding volunteer group is going from strength to strength, dealing with long-established problems such as ivy, bamboo, dock and tradescantia throughout Wilton Bush Reserve. This group is proving to be a real boost for my team and allows us to tackle some large areas that need careful treatment.

The new rātā moehau / *Metrosideros bartlettii* shrine donated by John Randall in memory of his late wife Robin is proving very popular. It was designed by Adam Ellis to be eventually taken over by the tree in time as the roots eventually establish within each leg of the structure.

We have been working with local weavers to get our new pā harakeke open before Christmas. There will be signage and labels on each group of weaving flaxes. We have new seats installed there and at the Northern Carpark Picnic area. In the next year or so we will be expanding all three pā harakeke with flaxes we have been propagating in our nursery.

We are progressing with our collections review and are interviewing partner organisations and external colleagues. We are excited about the improvements we are planning and have got some insightful feedback so far.

Megan is planning the Wellington BotSoc trip to Tongariro with her husband Tom Mayo, and has a permit lodged for collection while on the trip this summer. We hosted Lois Alison-Cooper from DOC's Tongariro Area Office when she was in Wellington for her BotSoc talk. Lois has been doing some great work on threatened plants and environmental weed eradication around the Tongariro area.

Sixty-four *Juncus holochenous* var. *holoschoenus* have been sent back to be planted in the wild. We fear the last remaining population in the wild has been lost.

We are very excited that both *Celmisia* 'Mangaweka' and rātā moehau (*Metrosideros bartlettii*) are budding up at the moment and we plan to hand pollinate the extremely rare plants to support partners' work to restore these two species in the wild.



Rātā moehau / *Metrosideros bartlettii* in flower at Ōtari.

We are looking forward to the “thank you” BBQ we are hosting at Ōtari before Christmas. The work we do at Ōtari is hugely supported by the volunteers that the Trust coordinates. We feel very fortunate to have such a supportive community around us, enabling Ōtari to be such a spectacular showcase of our native plants.

Do not forget to vote for your favourite native plant—this year we are backing kōhurangi / Kirk's tree daisy / *Bra-chyglottis kirkii* var. *kirkii*, a plant we have managed to successfully reintroduce to Pōneke and Zealandia from wild populations in regional parks with our City Arborist team. It is a difficult plant to keep alive so we are happy to see it flowering in the 38 Degrees Garden this year. We are collecting seed from wild plants again this year to continue this work at Ōtari. Vote for kōhurangi here: https://www.nzpcn.org.nz/flora/favourite-plant-vote/?flora_id=14564



A busy orchid summer included searching for *Pterostylis micromega* (A) with Greg Napp (back), Laura Park (middle)—both DOC rangers—and Carlos Lehnebach (front). This was followed by counting flowers and hand-pollination of *Gastrodia cooperae* (B) with summer scholar recipient Joe Dillon (front) and Carlos Lehnebach (back). *Gastrodia cooperae* (C) in flower 27 December 2022.

This year our Victoria University summer scholarship recipient was Joe Dillion. Joe focussed on various aspects of orchid conservation and assisted with field surveys, habitat description and seed germination. He also did pollination observations on perching orchids of the genus *Drymoanthus* and wrote an enjoyable blog which you can read at <https://blog.tepapa.govt.nz/2023/01/24/summer-scholar-turns-the-spotlight-on-native-tree-perching-orchids/>. We would like to thank the Deane Endowment Trust for funding the 2022/2023 summer scholarship.

The lab also received two new scientific freezers which enable us to store our seed more effectively in conventional seed banks. These freezers are designed to maintain a consistent 20°C as apposed to the fluctuating temperatures (between -11 and -23°C) associated with automatic thaw cycles in domestic freezers. One of the freezers will remain in the lab—the second will be housed at Wellington City Council’s Newtown depot as a duplicate storage. Our two sterile rooms in the lab continue to simplify our work on contamination of our orchid germination experiments now largely something of the past. We owe a huge thank you to Darea Sherratt for making this possible.

There have been recent reports of kiwi around Ōtari and we are now going into peak nesting season for our native birds, so it is more important than ever that dogs are kept on leads at Ōtari. If you see someone with an off-leash dog, please remind them that they can get a \$300 fine—I have found this works. Simply ask the owner to put their dog on a lead. If you feel comfortable with it take a photo and send to info@wcc.govt.nz or the Fixit App.

Ma te wa, Tim Park
Kaiwhakahaere Ōtari – Manager Ōtari Native Botanic Garden and Wilton’s Bush Reserve, Wellington city Council

Lions Ōtari Plant Conservation Laboratory: conservation of threatened native orchids

The expansion of the Lions Ōtari Plant Conservation Lab in December 2021 helped us to secure a three-year grant from Te Tahua Taiao Ngā Taonga (Lottery Environment and Heritage). The grant is used to support conservation actions (population assessments, establish propagation protocols, secure seed and orchid mycorrhizal fungi through long-term storage and generate plants for reintroduction) for five threatened species of native orchids. For each threatened species, a closely related, but widespread, surrogate has also been identified (Table 1). Surrogate species are used to optimise protocols for pollination, seed germination and fungal isolation, thereby limiting the impact of protocol development on threatened species.

Having a specific focus and clear goals helped us to make good progress. *Corybas dienemus*, *Drymoanthus flavus* and *Gastrodia cooperae* have been successfully germinated and restoration methods for both *Drymoanthus* and *Gastrodia* are being trialled (Fig. 1, 2). Although we managed to get fungi and seed from *P. irwinii*, seed germination was unexpectedly slow, possibly due to a mismatch between the fungi and the seed. We have however received more material thanks to Greg Napp and Laura Parks from Department of Conservation in the Nelson area. Although we have an historic record of *Pterostylis micromega* in the Mangaroa swamp (Whiteman’s Valley), the habitat has been largely

transformed and surveys to date did not reveal any suitable habitat. We thus went further afield to the Mangarakau wetland located south of Farewell Spit on the top of South Island, in December 2022. The population was however not doing well, and with only six individuals found, we decided not to harvest any material.

Table 1: Five threatened orchid species, the threat status and surrogate species included in the orchid conservation project.

SPECIES	CONSERVATION STATUS	SURROGATE SPECIES
<i>Corybas dienemus</i>	Threatened – Nationally Critical	<i>C. hatchii</i> / <i>C. iridescens</i>
<i>Drymoanthus flavus</i>	At Risk – Declining	<i>D. adversus</i>
<i>Gastrodia cooperae</i>	Threatened – Nationally Critical	<i>G. sesamoides</i>
<i>Pterostylis irwinii</i>	Threatened – Nationally Endangered	Various <i>Pterostylis</i> species
<i>P. micromega</i>	Threatened – Nationally Critical	<i>P. banksii</i> / <i>P. paludosa</i>

In November 2023, Carlos Lehnebach (Botany Curator, Te Papa) went to Opuatia wetland (Waikato) and managed to find root material (for fungal isolation) and capsules of *P. micromega*. We are grateful to Craig Purvis from Waikato Regional Council for arranging access and joining the collection trip and to Max Whitney for permission to collect material.



Figure 1: Restoration of (A) *Drymoanthus flavus* and (B) *Gastrodia cooperae* using biodegradable teabags containing seed and mycorrhizal fungi is being trialled.



Figure 2: Ben Carson (left) will be doing his summer scholarship on *Microtis* species together with Jennifer Alderton-Moss (right), research technician at the Lions Ōtari Plant Conservation Lab.

It is also summer scholarship time again and this year we welcome Benjamin Carson (Figure 2). Ben joins us from Otago University and will be comparing the fungal associations and seed germination between *Microtis unifolia* and *M. oligantha*. The former is very common (and sometimes considered weedy and invasive) while *M. oligantha* has a limited distribution in Wellington city and we are particularly interested to know if this is due to fungal specificity. Ben's scholarship was fully funded by the Deane Endowment Trust, and we are extremely grateful for their continued support in conservation and education.

Karin van der Walt

QEII National Trust update

Jamie Pearson – Land Protection Advisor

Becky Harris – Team Leader Land Protection

QEII National Trust is an independent charitable trust that partners with private landowners to protect natural and cultural heritage sites on their land. Landowners retain ownership of their property and special areas are protected with legally binding agreements called covenants, which remain on the land title forever.

As of November 2023, QEII has a total of 5,149 registered covenants protecting 184,521 hectares throughout New Zealand. In the Wellington region there are 380 Open Space Covenants registered, protecting 6,523 hectares. The largest registered covenant in the Wellington region is 824 hectares and the average size is 17 hectares.

New covenants in the Wellington region

Meld Works Ltd forest and wetland

Kōtare and Piwakawaka Covenants

0.78 and 0.5 hectares – Carterton, Wairarapa

Approved in April 2023



The landowners have owned their property for 20 years and over this time fencing, planting and weed control have resulted in massive changes and allowed natural regeneration around an existing bush remnant and natural wetland. This recently approved covenant protects remnant podocarp forest with kahikatea, matai and tītoki revegetated forest, and a restored wetland with pūreiri (*Carex secta* and *C. virgata*) and harakeke. Following increased deer incursions in recent years, the covenant has been deer-fenced to protect vegetation from browsers.

The covenant will add to a protected corridor of surrounding covenants on neighbouring properties.

Wright, Tankersley and Leitch

Springwood and Wildwood covenants

6.5 hectares, Upper Hutt

Registered in August 2023



Once logged for kahikatea, this covenant now protects lowland forest dominated by hard beech and kāmahī, as well as a shrubby wetland with *Carex*, small-leaved *Coprosma* and toetoe, with swamp forest on the margins. The block has been stock-proof for the past twenty years and as a result, the flora is highly diverse. The covenant includes mature epiphytes, including rātā and emergent kahikatea and rewarewa.

The landowners have also spotted the Wellington green gecko/barking gecko (*Naultinus punctatus*) inside the covenant area, which indicates good ecosystem health. The barking gecko is classified as At Risk – Declining due to threats from clearance of habitat and predation by mammalian predators.

QEII's contribution to new covenants

QEII contributes to fencing and initial establishment costs of new voluntary covenants. In most cases, QEII will share fencing costs of standard stock-proof fencing equally with the landowner. Third party funding may be available in some cases, often from local or regional councils. Each new covenant qualifies for an establishment grant of between \$500-\$5,000, to be used for covenant enhancement, which could include weed and pest management or plants for revegetation. Ongoing maintenance of the covenant area and fences are at the landowner's cost.

Become a member of QEII

Learn more about QEII's work by joining a passionate group of over 5,000 members. An individual membership is just \$30. You get two copies of QEII's Open Space magazine a year, plus other perks. Join online and help to encourage conservation on private land: qeii.org.nz/membership

Greater Wellington Regional Council work

Pest plants

Recently it has come to our attention that the plant houttuynia / *Houttuynia cordata* has been sold on Facebook Marketplace in our region. This is a National Pest Plant Accord (NPPA) species, which is an agreement to prevent the sale and/or distribution of specified pest plants in New Zealand. We work closely with the Ministry of Primary Industries to monitor and prevent the sale and distribution of NPPA species such as houttuynia, spread via human activity, within our region.

Since July this year we have found 34 new sites of our eradication species, moth plant / *Araujia sericifera* and woolly nightshade / *Solanum mauritianum*). The main sites are in Kāpiti Coast, Hutt City and Wellington City. The Wellington locations were found near an historical site that was eradicated a few years ago, and the others were found during our planned delimiting (surveying) around known sites. The good news is that we are about two-thirds of the way through inspecting our active eradication sites (351) and eleven have since been classed as eradicated (been clear for a minimum eight consecutive years). If you see any moth plant or woolly nightshade within our region, please contact us at pest.plants@gw.govt.nz

Invasive predators

Mustelids pose a significant risk to native wildlife, and recently you might have heard about a sighting of a ferret (roadkill) which was seen by one of our Senior Biosecurity Officers near the Haywards off-ramp along Transmission Gully / SH1. To date, this is the furthest south that they have been recorded, previously the furthest south was Paekākāriki. Ferrets are not present in Wellington City and surrounding areas but with the new state highway and Transmission Gully section, they have an access route into the city. They can travel long distances in search of food, habitat and a new mate, and rabbit numbers along the highway are plentiful. To mitigate this, the Regional Council will be installing some DOC250 traps in strategic places to intercept further movement south by these animals.

Please report any sightings of mustelids to the Council contact centre and log in iNaturalist in the GW Pest Animal Detector Project.

Ways to differentiate between different mustelids:

- Stoat—larger than weasel with a black tip on its tail, moves rapidly
- Weasel—they are the smaller, wee little fellas
- Ferret—largest of the mustelids, long hair and mottled, dark fur with white blotches

For more information on the above-mentioned pest animals and plants, please contact Pest and Weed central Ferret - Greater Wellington — Pest and Weed Central (gw.govt.nz).

Greater Wellington Contact Centre: 0800 496 734.

Mark McAlpine

Kaitaki-a-tīma | Team Leader Biosecurity – Pest Plants

Greater Wellington Te Pane Matua Taiao

M: 021 576 502

1056 Fergusson Drive, | PO Box 40847, Upper Hutt 5018

Follow us online: gw.govt.nz | [Facebook](#) | [Twitter](#)

Percy Scenic Reserve, Petone

Coming to the end of another spring season, many plants have been flowering well throughout the reserve, with *Clematis paniculata* and *C. forsteri* doing well and *C. forsteri* is smelling amazing. *Passiflora tetrandra*, the native passion fruit, is just coming into flower and also smells fantastic.

I have sown seed earlier in the season collected on our trip to Mt Hutt, Te Waipounamu/South Island in March this year. I have also sown a couple of the batches of *Plantago triantha* and *P. aucklandica* seed from Te Papa, collected on their trip to the Auckland Islands. The *P. triantha* germinated well but the *P. aucklandica* have taken a while to germinate and are just starting to do so now. I have also sown more *Celmisia mangaweka* for our propagation plan, along with Ōtari-Wilton's bush, for DOC to hopefully reestablish them in the wild.

I took some cuttings of *Metrosideros bartlettii* some time ago, from a tree growing in the conservatory in the Lower Hutt Council gardens. They sat there doing nothing for ages, with most of them dying. About twenty of the original cuttings have started to form calluses with one forming roots—I have potted this one up.

The alpine plants are flowering well now, particularly those in the new climate-controlled houses, including those collected on our collection trip in March. The *Ranunculus crithmifolius*, *Geum cockaynei* and *Ourisia caespitosa* are doing well.

Looking to the future, Lower Hutt City Council are getting things underway to build another two climate-controlled houses next to the first two. This will involve demolishing the oldest house, which was always the plan anyway, re-building our shade-house on that area, then building the new houses on the current shade-house site. We hope to have everything in place by December, hopefully starting work in the New Year. This can only be a good thing for the alpine collection.

Cliff Keilty

Gardener, Downers

Note: The reserve is about ten minutes walk from Petone Station – from the platform use the foot-bridge over SH2 then walk north to the reserve.. The car park is off the bottom of Maungaraki's Dowse Drive near the Dowse Interchange on SH2. The reserve features native forest, plantings, tracks and paths, historic sites, lawns, ponds, seats for picnics and up a bush-clad valley an impressive waterfall.

Taputeranga Marine Reserve
For any Conservation-related illegal activity,
call the 24-hour conservation emergency helpline
DOC HOTline
0800 362 468
For Search & Rescue—call 111
All other enquiries to your local DOC office or visit our
website www.govt.nz
Department of Conservation
Te Papa Atawhai
New Zealand Government

Find and report the exotic fern *Polypodium vulgare*

Leon Perrie

Museum of New Zealand Te Papa Tongarewa, Wellington.
leon.perrie@tepapa.govt.nz

The exotic fern *Polypodium vulgare* is being increasingly detected in the southern North Island. You can help stop its establishment by learning how to recognise it and reporting any sites you find on the website iNaturalist or emailing: pest.plants@gw.govt.nz. Greater Wellington Regional Council is actively controlling this species in areas of high ecological importance, and gathering data to assess future management options.

Recognising *Polypodium vulgare*

Polypodium vulgare is a small-to-medium sized ground fern with once-divided fronds that are spread along a creeping rhizome (Figure 1). The frond lamina is dissected right to the rachis, and there are small teeth along the pinna margins. The spore-making capsules are clustered into oval sori, which are unprotected, with no indusia.



Figure 1. *Polypodium vulgare*.

The indigenous kōwaowao, hound's tongue fern, *Lecanopteris pustulata* (aka *Microsorium pustulatum*) looks similar but has glossier fronds whose lobes are not dissected to the rachis (i.e., there is always a wing of lamina along the rachis) (Figure 2). The lobe margins are untoothed. Kōwaowao also has its fronds spread along a creeping rhizome but has blackish rhizome scales as opposed to the orange-brown rhizome scales of *Polypodium vulgare*.

Also somewhat similar to *Polypodium vulgare* is the indigenous korokio, *Blechnum deltooides* (was *B. vulcanicum*), but this can be distinguished by its dimorphic fertile fronds that have much narrower and darker pinnae than the sterile fronds (Figure 2). The fronds of *Blechnum deltooides* are more-or-less clustered, rather than distantly spread along a creeping rhizome.

The spread of *Polypodium vulgare*

Polypodium vulgare is indigenous to Europe and parts of Asia and Africa. It was first found wild in New Zealand about 1970. The first published report is from 1980, when just four populations were known, all on the Port Hills near Christchurch. Unfortunately, it has subsequently spread far



Figure 2. Similar-looking species in New Zealand: at left, kōwaowao, hound's tongue fern, *Lecanopteris pustulata* (*Microsorium pustulatum*); at right, korokio, *Blechnum deltooides*, with its strongly dimorphic fertile frond right of centre. Photos: Leon Perrie.

and wide. It is now abundant on the Port Hills and occurs throughout Banks Peninsula. It has spread to northern Canterbury, Marlborough, and into the southern North Island (Figure 3).

The first North Island report was in 2006 from near Plimmerton. Before 2020, *Polypodium vulgare* was known wild in the North Island otherwise only from Cape Palliser. In 2020 it was found on the hills west of Crofton Downs and alongside Hawkins Hill Road; in 2021 at several sites near the south coast between Sinclair Head and Owhiro Bay; and in 2023 in the CBD and on the seaward side of the Hutt Road Expressway. Worryingly, it was recently found near Greytown.

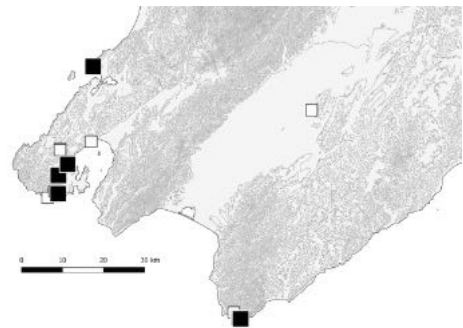


Figure 3. Recorded distribution of *Polypodium vulgare* in the southern North Island. Black squares are herbarium specimens. White squares are verified iNaturalist observations. The location of the record near Greytown is only approximate.

The problem with *Polypodium vulgare* is that it can locally dominate its favoured habitats, such as open banks, out-competing (including out-shading) indigenous species (Figure 4). This affects herbs but also the juveniles of larger plants.

Newsletter by e-mail?

If you would like to receive your newsletter electronically in PDF format, please contact Memberships Secretary, wellingtonbotsocmembership@gmail.com. The PDF newsletter includes hyperlinks to e-mail and website addresses, and colour images instead of the black-and-white images in the print version.

Ngā mihi, Laura Girvan West, Secretary



Figure 4. *Polypodium vulgare* dominating an open bank on the Port Hills. Photo: Jon Sullivan (CC BY). <https://inaturalist.nz/observations/116053070>

What to do

All populations of *Polypodium vulgare* should be reported to the Greater Wellington Regional Council via the email pest.plants@gw.govt.nz. Uploading photos with precise locations to the iNaturalist website is another option, as the council is monitoring this.

Small populations might be destroyed when found. However, take care to remove all the rhizome, which can be underground. Dispose of the rhizome only where it cannot survive if it resprouts. Be careful to not disperse spores from any fertile fronds, including cleaning footwear.

Further reading

Brownsey PJ, Parris BS, Perrie LR. 2021. Polypodiaceae. Fascicle 1, 2nd edition. In Breitwieser I (ed). Flora of New Zealand – Ferns and Lycophytes. Manaaki Whenua Press, Lincoln.

Perrie L, Giller M, Carter D, Shanks A, Brownsey P. 2019. The fern *Polypodium vulgare* as a weed in New Zealand. *Canterbury Botanical Society Journal* 50: 75–83.

Ann and Basil Graeme, Tauranga

We congratulate Ann and Basil who have been awarded Forest & Bird's highest honour—that of Distinguished Life Members. Long-term members of BotSoc, they accompanied our group on our day trips when we were based at Aongatete Outdoor Education Centre, Bay of Plenty.

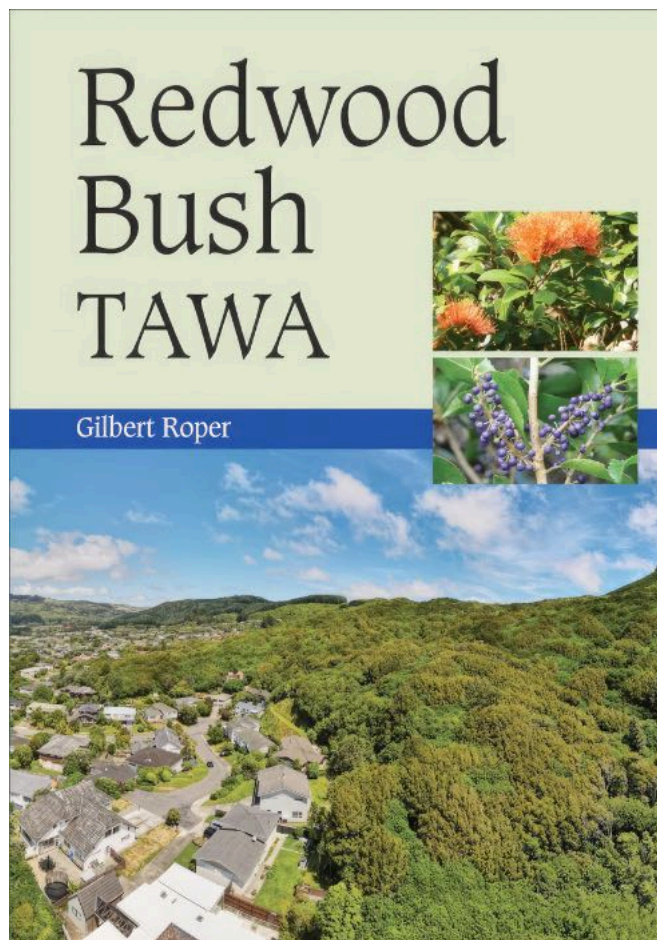
Redwood Bush, TAWA – reprinted

This popular book, published in October 2022, quickly became out of print. It has been reprinted by Friends of Tawa Bush Reserves.

This was author Gilbert (Gil.) Roper's third publication relating to Tawa. Gil sadly died early this year. He was motivated to write this book: *Redwood Bush, TAWA* after reading how Redwood Bush was saved when the Redwood subdivision began making inroads into the native bush for housing development in the 1970s. Many Tawa residents objected to seeing pristine native bush destroyed. Ultimately, Tawa Borough Council secured a loan from Treasury to purchase the area as a reserve. Today it's an invaluable recreational resource of mature lowland native bush.

The colour-illustrated, 160-page, A4-size book features:

- native bush in Tawa at the time of pioneer settlement
- some history of the Redwood subdivision
- residents of Tawa protest and action is taken
- recollections by residents of changes in Redwood Bush over time
- walking Redwood Bush nowadays
- visual details of the native flora and birds in Redwood Bush and how these have changed
- lizard studies, lichens and fungi recorded in Redwood Bush
- pest control and the resurgence of the flora and fauna
- information on a new signed botanical walk in Redwood Bush.



Orders: place with Richard Herbert, Friends of Tawa Bush Reserves: herbert.r@xtra.co.nz with payment made by direct credit to FOTBR's bank account, using 'Surname or organisation' for **Particulars** and 'Redwood Bk' as a **Reference**. The FOTBR account number is: 03 – 1534 – 0043966 – 25. The cost is \$45 per book.

When placing an order with Richard, please indicate the address to which the book is to be delivered to. For Tawa residents arrangements can be made for hand delivery. For delivery beyond Tawa, books can be couriered, but this will incur an extra charge. Books can also be purchased from 'Tawa Books and Post', Main Road, Tawa for \$45 (cash).

This publication is sponsored by the Friends of Tawa Bush Reserves (FOTBR), which is a non-profit organisation and seeks to defray the cost of printing through sales of the book. See: <https://tawabush.org.nz>.

Evolutionary flower-size changes on islands in the Southwest Pacific

Riccardo Ciarle, K.C. Burns and Fabio Mologni

Island faunas are often characterised by gigantism in small animals and dwarfism in large animals. While established in vertebrates, little is known about this “island rule” in plants, and the pattern has never been tested for flower size. We used a dataset of paired island-mainland seed plant relatives to test whether zoophilous and anemophilous flowers follow the island rule across ten oceanic archipelagos surrounding New Zealand.

Our results indicate that zoophilous flowers follow the island rule, while anemophilous flowers tend to get bigger on islands (Fig 1). We conclude that, while the *in-situ* evolution of flower size on islands seems pervasive across seed plants, species belonging to different pollination syndromes follow markedly different evolutionary trajectories.

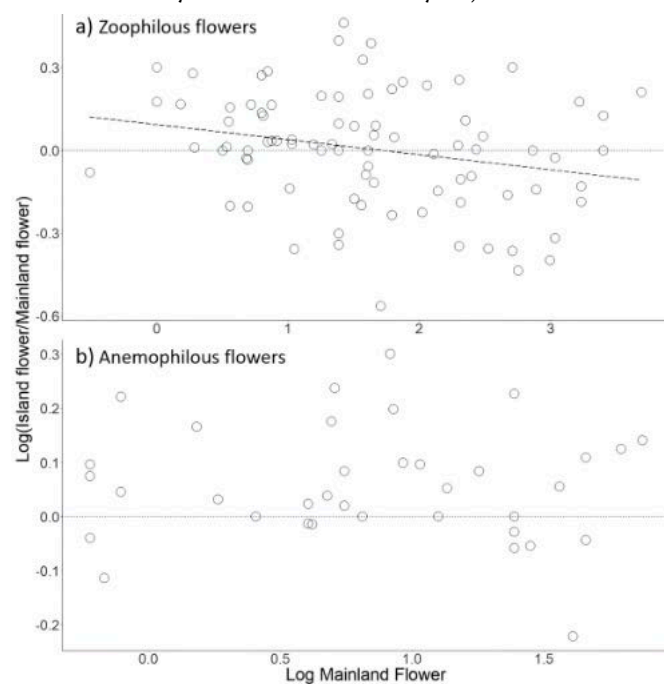


Fig 1. Log Ratio of island/mainland flower size varying as a function of log mainland flower size for a) zoophilous and b) anemophilous flowers. Each point denotes an island/mainland pairing. A regression line with a slope significantly smaller than 0 (zoophilous flowers) gives support for the island rule. If most points are above zero (anemophilous flowers), there is evidence for gigantism.

Moss Matters: Unravelling the intricate web of interactions between mosses, microclimate, and seed germination in New Zealand's alpine ecosystems

By Paul Bell-Butler

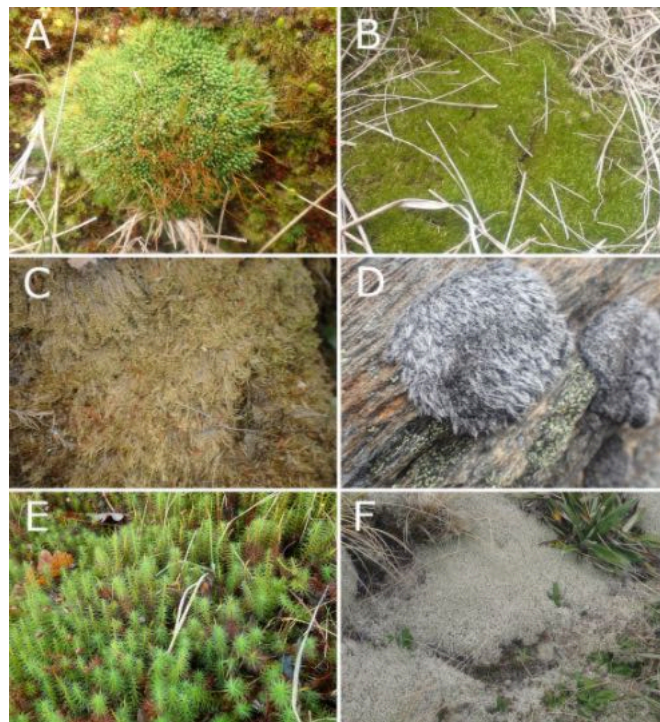
Supervised by Dr Nicola Day (VUW) and Prof. Hannah Buckley (AUT)

Mosses are abundant in New Zealand tussock grasslands and are known to increase the amount of water that is stored and slow its release within ecosystems. This could alter conditions at a microclimate scale and may be linked to quantifiable traits. As water availability is a crucial factor for many ecosystem processes, including the germination and growth of seedlings, this may influence vascular plants. Moss abundance and diversity is strongly affected by

disturbance in tussock grasslands and takes years to decades to recover to pre-disturbance levels. While vascular vegetation is well-known to alter temperature and moisture conditions at a fine scale, limited research has been undertaken, particularly in New Zealand, into the ecological relationships and effects of any bryophytes, including mosses. My thesis aims to understand how the functional traits of bryophytes can inform their role in microclimate mediation and the germination of vascular plants in New Zealand tussock grasslands. In addition, I sought to examine how moss traits varied across climatic gradients, especially levels of precipitation.

I measured soil, ground surface, and air temperature, and soil moisture in the field and analysed how they varied with the presence of a moss (*Polytrichum juniperinum*), snow tussocks (*Chionochloa*), and topography over a summer growing season. I also collected and measured morphological and functional traits of 249 moss specimens of eleven species collected from grasslands throughout Canterbury and Otago, focussing on traits important for water relations. I then tested the germination of the exotic pest plant, *Pilosella officinarum*, using seven moss species as substrates or bare ground.

Water capacity, density, and water retention ability were highly variable within and between moss species. Some specimens (*Polytrichum juniperinum*) were able to take up ~175% of their dry mass, others (*Hypnum cupressiforme*) over 2000%, and desiccation times (to 50 % water capacity) ranged between 6.4 and 271 hours. Density varied over two orders of magnitude. There were distinct differences in some functional traits between species and groups of species delimited by life form.



Life-forms of some common New Zealand alpine moss species. A: *Conostomum pentastichum*, a cushion; B: *Dicranoloma robustum*, a turf; C: *Hypnum cupressiforme*, a weft; D: *Grimmia* sp., a cushion; E: *Polytrichum commune*, a turf; and F: *Racomitrium pruinosum*, a turf.

I demonstrated significant differences in ground surface and soil temperatures linked to the presence of tussock grasses and topography. Being near a tussock, or in a valley, reduced fluctuations and extremes of temperature at the

ground surface and in the soil. Moss did not have a detectable effect on microclimate. This may be due to the species present at the site I tested (*P. juniperinum*). In my trait measurements *P. juniperinum* had very high density, a trait linked to poor thermal insulative properties, and was the least able to take up and retain substantial amounts of water, likely reducing its efficacy as a regulator between the climate and the microclimate.

Pilosella officinarum germination rate was higher on bare soil compared to any moss species. Seedling growth (total biomass) was lower in moss in general compared to bare soil, and varied among the moss species themselves. Smaller, shallower colonies, such as those of *Polytrichum juniperinum*, were better substrates for seeds than deep turfs such as *Polytrichastrum alpinum*, although one relatively large species, *Sanionia uncinata*, was also nearly as good a substrate as the soil control by some metrics, particularly germination rate.

My results support the hypothesis that mosses can influence the germination of vascular plants, and that the effects may be mediated by quantifiable traits. I demonstrated both intra- and between-species trait variability across different mosses, but findings did not suggest trends across climatic gradients. My findings, in addition to previous ecological studies, indicate that mosses have important ecological functions and their removal with disturbance likely affects 'higher' plants, too.

Native trees flowering early

Allan Sheppard reports photographing native trees in flower in the Pakuratahi Forks area of Kaitoke Regional Park in June—unusually early in the season. Was this only in the Upper Hutt valley he asks? The plants were: *Laurelia novae-zelandiae* / pukatea and *Pseudowintera axillaris* / lowland horopito. The pukatea is next to the bridge over Pakuratahi Stream at Pakuratahi Forks. The horopito (picture) was on

the loop track. Both these species are described in the Plant Conservation Network website as flowering in September–December.



Pukatea/*Laurelia novae-zelandiae* fruiting in June at Pakuratahi Forks.



Pseudowintera axillaris flowering in June at Pakuratahi Forks.

He also photographed *Melicytus ramiflorus* / māhoe with new growth taken at the same time. This specimen was just west of the Ranger Station at Kaitoke.



New growth on *Melicytus ramiflorus* in June at Pakuratahi Forks.

Another species that was easily seen at the time was *Alectryon excelsus* / titoki especially on the Wellington Fault escarpment at the Silverstream lights on SH2. The growth pattern was similar to the māhoe—lighter coloured new leaves.

The local weather over autumn and early winter this year seemed to be unusually wet and overcast.

*Allan Sheppard
Te Mārua, Upper Hutt*

DOC Wellington
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Department of Conservation
Te Papa Atawhai

TRIP REPORTS

7 October 2023: Remutaka Ridge trip

Despite a dubious weather forecast sixteen of us set off from the SH2 Remutaka Summit carpark to explore the track along the ridge to the west. Miraculously, there was no wind but we did get wet. This is subalpine scrub, with areas of beech forest below the ridge. The track is a tramping track—it had been cleared fairly recently. There was gorse, but mostly of the ankle-biting variety. There is a short loop from the carpark—the banks of this were interesting and included some species such as *Blechnum deltooides* that we didn't see anywhere else. The ridge climbs as you go along, and subalpine species start to appear, e.g., *Euphrasia cuneata* and *Androstoma empetrifolia*. We saw a rather con-

fused seedling of northern rātā. There was a lot of *Olearia arborescens* and *Dracophyllum filifolium*. One of the highlights for me was the two species of *Gonocarpus*, a genus I like but don't meet very often.

Participants: Fiona Angus, John Barnett, Ellen Blake, Eleanor Burton (leader / scribe) with Loki the dog, Joe Dillon, Pat Enright, Frances Forsyth (co-leader), Juliette Fuehrhop, Kate Jordan, Emma Parker, Sarah Parker, Mick Parsons, Leon Perrie, Grant Roberts, Lara Shepherd, Julia Stace,

Dracophyllum filifolium.
Illustration: Eleanor Burton.



18 November 2023: Te Mārua Bush workbee

Most of the time we spent making a sweep of the area looking for the usual weeds—e.g., montbretia and tradescantia—plus general rubbish. The result was only a 40 litre bag each of weeds and general rubbish with a bit of old iron. This is less than usual. Some wires in the fence beside SH2 need tightening.

An unusual find was a grove of greenhood orchids—*Pterostylis* sp. coming into flower. We could not remember having seeing these previously. We also collected some *Nestegis cunninghamii* / black maire for growing on in the Upper Hutt Forest and Bird nursery as approved by the ranger.

The bush had lush new spring

growth—possibly a result of the long wet winter.

We heard a shining cuckoo / pipiwharuroa—a harbinger of spring.

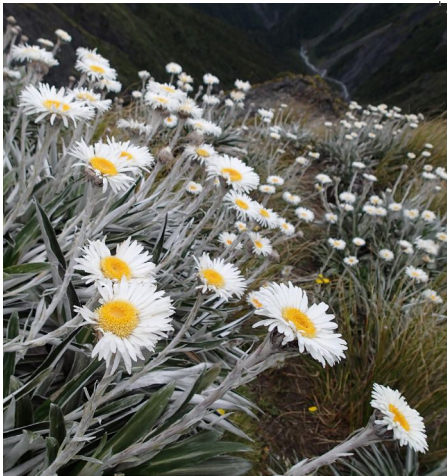
Participants: John Barnett, Chris Horne, Sue Millar, Ann Mitcalfe, Graeme Sheppard, Allan Sheppard, Glennis Sheppard (scribe), Steve Edwards – GWRC.



Nestegis cunninghamii fruit. Photo: Jeremy Rolfe.

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JANE GOSDEN

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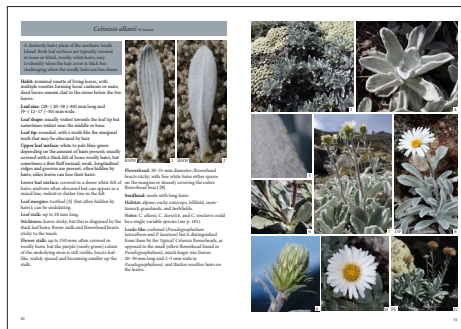
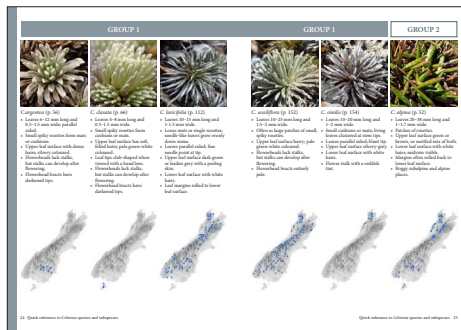
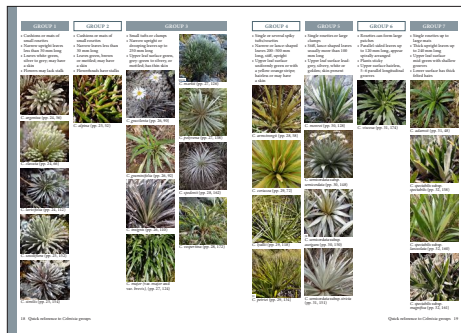
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- Distribution maps for each species and subspecies
- Quick identification reference to recognisable groups (available free)
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- Also to be available as an electronic publication



HOW TO ORDER

Printed books will be available in mid-December (\$30 incl. p&p).

The book will also be available in electronic form (date to be advised). Please indicate your interest on the order form.

The quick identification guides that make up the first two sections of the book will be available from the end of November FREE as a PDF from:

<https://www.manukapress.co.nz/mountaindaisies>

This is a handy PDF that can be taken into the field.

Please complete the order form on the Manuka Press website:

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Wellington Botanical Society

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



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

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

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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 2024 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 pay direct to the Society's bank account 020536 0017812 00

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Particulars: *Name*

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	Country membership	\$.....
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As we can no longer accept cheques, cash payments can be made directly to a member of the committee on meeting nights or field trips if the correct value is placed in a sealed envelope addressed to Membership Secretary with a copy of this form.

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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 agree 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, email, 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.

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