



TRILEPIDEA

Newsletter of the New Zealand Plant Conservation Network

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Deadline for next issue:
Friday 17 February 2023

SUBMIT AN ARTICLE TO THE NEWSLETTER

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

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

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

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

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Pterostylis irwinii. Photo: Rowan Hindmarsh-Walls.

President's Message—2022 in review

John Barkla (mjbarkla@xtra.co.nz)

The highlight of 2022 has to be the outstanding success of our Queenstown conference earlier this month. The talented organising team of Alex, Jesse and Jo, along with the many and varied sponsors, contributors and helpers, delivered a seamless programme of presentations, workshops, field trips, awards and social activities. It was a great pleasure to meet many new members and to catch up with long-time friends. Congratulations to all our award recipients. Already the talk is starting around where the next conference will be.

The conference capped a busy year for the Network. Here are some of the highlights:

- Increasing membership, with 972 members at last count.
- Significant improvements to the website including an enhanced flora search function and a new tool that allows users to search taxa through over 7,500 tabulated plant lists.
- A substantial update of the Regional Botanical Society journal articles available through the website. There are now a staggering 3,634 journal and newsletter articles available.
- More than 400 factsheets for NZ lichen species completed – this is almost 20% of the lichen flora, and includes about one third of the Threatened / At Risk lichen species in NZ (90 out of 277 species).
- Ongoing photographic additions to the website. In total, 322 photographers have contributed over 31,000 photos to the website. Of the 2,542 native vascular plant fact sheets, only 63 lack any images.
- A regular monthly newsletter filled with photos, snippets, and botanical stories. We still need your help though. Please don't be shy!
- Submissions made to advocate for plant protection. We submitted on proposed changes to the National Policy Statement for Freshwater Management (NPSFM) and Environmental Standards for Freshwater (NES-F). In particular, we highlighted the importance of wetlands to so many of our threatened plants.
- A review of our 5-year Strategic Plan underway. As part of the review, we're taking a close look at our Fact Sheets to ensure they're still fulfilling their purpose. Any thoughts on this or other strategic matters are always welcome.

Throughout the year I've appreciated and enjoyed the support of all the Council members, our Administrator, co-opted volunteers (now called kaiāwhina) and our two major sponsors. Next year will be the 20th anniversary of NZPCN so have a think about how you'd like to see that celebrated.

I wish you all a safe and relaxing time over the festive season. Have fun in the outdoors and if you see something interesting, take a photo, write a paragraph or two, and share it with the rest of us!

PLANT OF THE MONTH – *PTEROSTYLIS IRWINII*

Rowan Hindmarsh-Walls (rowan.hindwalls@gmail.com)

The plant of the month for December is the orchid *Pterostylis irwinii*, one of at least 29 *Pterostylis* species native to the New Zealand region. In the North Island, the species is only known from around the central volcanic plateau and at Palliser Bay. In the South Island it is found in the northern part of the island, down to Kaikōura in the east and Arthurs Pass on the western side. The species is mostly found in damp soil under forest or shrubland from sea level to montane elevations, and seems to prefer fertile substrates, especially limestone, marble, and mudstone. It can be found under a range of different forest types ranging from kanuka to beech, to mixed angiosperm species, but doesn't seem to tolerate too much competition from other ground-cover species.

The plants are generally around 10–15 cm but can grow up to 30 cm tall when flowering. They have bright green, fairly narrow leaves arranged up an orangey-yellow stem. The leaves are obviously keeled along the midrib and sometimes have an orange or yellowy tint along the midrib and edges. Each plant has a single green and white flower with the dorsal and lateral sepals (pointy bits) often tinged red. The lateral sepals (upwards facing pointy bits) are often held straight up or forward of the galea (fused floral tube).



Pterostylis irwinii, Inland Kaikoura Range, Marlborough 16 November 2022: (left) profile image of flower, (centre) front image of flower, (right) whole plant showing habit. Photos: Rowan Hindmarsh-Walls.

The species is similar in looks to a number of other native species of *Pterostylis* but can generally be distinguished by the upward or forward-facing lateral sepals, which means the flowers have an obvious gap between the lateral sepals/petals and the galea. The extremely sensitive, oblong-lanceolate, reddish-brown labellum is also distinctive.

P. irwinii has a conservation status of 'Threatened – Nationally Endangered', as it has a very sparse distribution, and most populations are quite small, although it is being found at more locations every year now that more people are recognising the species. Three new populations have been found in Marlborough and North Canterbury in the last couple of years, extending the species' distribution significantly. The species' main threats are probably competition with exotic weed plant species and habitat loss due to forest and scrub clearance. It seems to persist in areas with high ungulate numbers suggesting these are not a significant threat.

The genus *Pterostylis* is large, with around 300 species found around Oceania, from Indonesia in the north to New Zealand in the south. Many of the New Zealand species are endemic to this country, but some are also found in Australia.

The genus name *Pterostylis* or 'winged column' is from the Greek *pteron*, or 'wing' and *stylos* or 'pillar'. The name refers to the column, which is the combined reproductive structure within the orchid's flower. The species is named after the late James Bruce Irwin, who was a great New Zealand botanical illustrator and orchid discoverer.

You can view the NZPCN website factsheet for *Pterostylis irwinii* at: <https://www.nzpcn.org.nz/flora/species/pterostylis-irwinii/>

Lawns of Bluff: a surprising biodiversity hotspot on our southern coast

Marley Ford mfecobotany@gmail.com

Walking through the suburbs of Bluff to the historical cemetery in search of lichens, one is easily distracted. Within five minutes of walking, I was on my knees looking at herbs in the sandy-soiled lawns of Bluff, parallels of coastal turfs. What look like typical suburban lawns, in fact host a surprising variety of native plants, including rare species (Figure 1).



Figure 1. A typical lawn of Bluff confined by concrete and cut short.

In places native herbs such as *Plantago triandra* (Figure 2) and the unnamed Southern coastal entity of *Chaerophyllum* (a) (CHR 364086; “minute flower”) (classified as At Risk – Naturally Uncommon by de Lange et al. 2018) (Figures 2 & 3), dominate the turf. Other common native low-growing herbs include a small-leaved form of *Dichondra brevifolia* agg. with large flowers (Figure 4); a purple form of *Centella uniflora*; the minute creeping *Gonocarpus micranthus*; *Hypericum pusillum* with its conspicuous yellow flowers; *Lobelia angulata* with a mass of flowers in lawns; the ‘weedy’ native willowherb *Epilobium nummulariifolium*; *Hydrocotyle heteromeria* and the similar *Hydrocotyle microphylla*.



Figure 2 (left). The herbs *Plantago triandra* (left) and *Chaerophyllum* sp. (a) (CHR 364086; “minute flower”) (right) in lawn.

Figure 3 (right). Dark brown patch of *Chaerophyllum* sp. (a) (CHR 364086; “minute flower”) (right) in lawn.



Figure 4. *Dichondra brevifolia* agg. dominating in lawns.

Especially interesting native creeping herbs include the small *Acaena microphylla* var. *pauciglochidiata* (At Risk – Declining) (Figure 5), of great excitement to me as I'd been hunting for this species a few days earlier at Cosy Nook with no luck, only to find it growing on the footpath edge 25 metres from my accommodation in Bluff! The larger creeping herb *A. pallida* (At Risk – Declining) was common in lawns, though often greatly stunted, with some plants resembling *A. novae-zelandiae*, which was also likely present. Slightly stunted forms of the 'Threatened – Nationally Vulnerable' Southland daisy *Leptinella traillii* subsp. *pulchella* (Figure 6) were also observed as small patches in lawns. Looking very similar to the purple form of *Centella uniflora* was the coastal musk *Mazus arenarius* (At Risk – Declining) (Figure 7). The weedy race of the 'Threatened – Nationally Vulnerable' herb *Geranium* aff. *retrosum* (a) (AK 299877; Canterbury) (Figure 8) is locally abundant in the longer lawns and is a great



Figure 5 (left). The dark purple-coloured *Acaena microphylla* var. *pauciglochidiata* on footpath edge.
 Figure 6 (right). *Leptinella traillii* subsp. *pulchella* hanging over kerb.



Figure 7 (left). Brown-leaved *Mazus arenarius* in lawn.

Figure 8 (right). *Geranium* aff. *retrorsum* hanging over kerb.

coloniser of disturbed ground. This race is currently regarded as indigenous and is differentiated from the rare truly indigenous form by the lack of turnip-shaped roots. The native cress *Cardamine corymbosa* was common around lawn edges, while the similar species *C. heleniae*, which is classified as ‘Data Deficient’, was less common. The native onion orchid *Microtis unifolia* was common in lawns that haven’t been cut for a while, while *Thelymitra longifolia* agg. was much rarer. Various native asters occurred in lawns, the weedy *Cotula australis*, silver patches of *Euchiton audax*, and the new combination for the native cudweed *Pseudognaphalium lanatum*, separated from the introduced *P. luteoalbum* by the yellow or colourless floret tips and usually denser indumentum on leaves and stems (Smitsen et al. 2022).

Native sedges dominate the lawns in places, the most common being the lime green *Schoenus maschalinus* and the often-copper-brown stunted *Eleocharis acuta* with another stunted sedge *Juncus planifolius* found scattered throughout. Larger shrubs of mikimiki (*Coprosma propinqua* var. *propinqua*) and southern rātā (*Metrosideros umbellata*) were seen tortured to lawn height by the frequent mowing. In sprayed areas the native liverwort *Marchantia berteroana* was seen growing *en masse*, and various native moss species were common throughout the lawns.

The exotic flora of Bluffs’ lawns includes the herbs lawn daisy (*Bellis perennis*); catsear (*Hypochaeris radicata*); hawkbit (*Leontodon saxatilis*); birdsfoot trefoil (*Lotus pedunculatus*); the plantains *Plantago australis* and *Plantago lanceolata*; selfheal (*Prunella vulgaris*); procumbent pearlwort (*Sagina procumbens*); golden-eyed grass (*Sisyrinchium californicum*); and the clovers *Trifolium dubium* and *Trifolium repens*. Exotic grasses in the longer lawns comprise a mix of sweet vernal (*Anthoxanthum odoratum*), cocksfoot (*Dactylis glomerata*), chewings fescue (*Festuca rubra* subsp. *commutata*) and perennial ryegrass (*Lolium perenne*).

One particularly interesting frontage was found to host a diversity of native plants and some new southern records. Bluff is well known to botanists for its disjunct population of the tiny sundew *Drosera pygmaea* (At Risk – Relict) (Figure 9), a small carnivorous plant. This species was found on the exposed sandy soils of a recent house build, along with the small ‘Threatened – Nationally Endangered’ annual restiad *Centrolepis strigosa* (Figure 10). *Centrolepis strigosa* was very common in this lawn at the time of my visit, with more than 30 plants seen, and another smaller population was found in a different lawn close by. Two new southern distribution limits were also found in this lawn, the first being *Epilobium hirtigerum* (At Risk



Figure 9. Small red *Drosera pygmaea* in sandy lawn.



Figure 10 (left). The small restiad *Centrolepis strigosa* in sandy lawn.

Figure 11 (right). The blue green *Epilobium hirtigerum* in sandy lawn with *Juncus planifolius*.

– Recovering) (Figure 11), a plant that appears to be rapidly moving into urban environments, and the second being *Schoenus apogon* (Figure 12), which was locally common around Bluff. These species require disturbance as it creates bare habitat for their seeds to germinate and the recent building of the adjacent house appears to have provided suitable conditions for them to colonise the site. However, it's not known why this this property hosts such a variety of notable species.



Figure 12. *Schoenus apogon* scattered in sandy lawn.

While based in Southland over the last few weeks, my casual observations have revealed a total of 30 native plant species living in the lawns of Bluff, a third (10) of which are threatened. Southland has its own distinctive coastal turf plant communities, encouraged in the past by the activities of seabirds

along its coast. Often these plants are halophytes, able to withstand high salinity, the exposed conditions of the coast and trampling of flocks of seabirds. Bluff's lawns draw parallels, acting as a surrogate habitat to these natural environments, which have been greatly reduced in extent. The lawn communities are maintained by the plants growing in sandy soils being regularly maintained and cut low, the sound of which can be heard in chorus on the otherwise quiet Bluff weekends. These lawns experience a range of conditions from cool and damp to often dry, hot, and free-draining.

From a conservation and educational point of view, we should aim to incorporate all kinds of native biodiversity into our urban landscapes. This is not a novel idea (Meurk & Greenep 2003), but the Bluff lawns serve as an example of how this could be implemented. Rather than monocultures of lawn made up of exotic grasses with low ecological benefits, inducing and encouraging native coastal turfs would increase suburban biodiversity (Horne et al. 2005). At the very least these lawn turfs could hold refugia for these plants with their natural habitats potentially threatened by sea level rise in future.

Acknowledgements

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References

All vascular plant threat assessments are from the most recent New Zealand plant threat assessment:

de Lange, P.J.; Rolfe, J.R.; Barkla, J.W.; Courtney, S.P.; Champion, P.D.; Perrie, L.R.; Beadel, S.M.; Ford, K.A.; Breitwieser, I.; Schonberger, I.; Hindmarsh-Walls, R.; Heenan, P.B.; and Ladley, K. 2018. Conservation status of New Zealand indigenous vascular plants, 2017. *New Zealand Threat Classification Series 22*. Department of Conservation, Wellington. 82 p.

Horne, B.; Stewart, G. H.; Meurk, C. D.; Ignatieva, M.; and Braddick, T. 2005. The origin and weed status of plants in Christchurch lawns. *Canterbury Botanical Society Journal*, 39, 5–12.

Meurk, C. D. and Greenep, H. 2003. Practical conservation and restoration of herbaceous vegetation. *Canterbury Botanical Society Journal*, 37, 99–108.

Smisson, R.D.; Breitwieser, I.; and de Lange, P.J. 2022. *Pseudognaphalium* (Asteraceae, Gnaphalieae) diversity in New Zealand revealed by DNA sequences with notes on the phylogenetic relationships of Hawaiian Islands plants referred to *Pseudognaphalium sandwicenseum*. *New Zealand Journal of Botany*, 1–28. (Published online: 19 Oct 2022)

Former DOC ranger wins prestigious plant conservation cup

Former Golden Bay DOC Ranger Simon Walls has been presented with one of New Zealand's most prestigious conservation awards, the Loder Cup.

Minister of Conservation Poto Williams presented the Loder Cup to Simon Walls for his significant contribution to native plant conservation, at a ceremony at Onetahua Marae in Golden Bay on 29 November 2022.

The Loder Cup was first donated in 1926 to encourage and honour New Zealanders who work to investigate, promote, retain and cherish our indigenous flora.

Department of Conservation (DOC) Northern South Island Operations Director Roy Grose says Simon Walls is a worthy recipient of the Loder Cup because of his dedicated work to protect and restore native plants that went above and beyond his DOC work.

“Simon's passion for our native flora and his outstanding efforts to preserve it have been lifelong and are continuing since his retirement in 2021. “Simon has made many important achievements for our native flora, including helping to prevent



Figure 1. Simon Walls with Conservation Minister Poto Williams following the award presentation. Photo: Rick McGovern-Wilson, DOC.

the extinction of some unique species, notably coastal peppergrass (*Lepidium banksii*). “Simon has found previously undiscovered native plant species, such as the Te Tai Tapu forget-me-not and the Te Tai Tapu daphne in north-west Nelson. He has also discovered new populations of threatened species.

“Such is Simon’s commitment to our native flora, he grows threatened native plants at his Golden Bay home, including *Pentapogon lacustris*, Cook’s scurvy grass, tarata Kahurangi and coastal peppergrass. The cultivation of these plants helps ensure the continuation of species should they become extinct in their natural environments and provides seedlings for planting in the wild.

“Simon has worked to protect and preserve threatened native species in the Cobb Valley in Kahurangi National Park. It includes new plantings of two rare pittosporum species in the area, which he is continuing as a retirement project.

“The Golden Bay/Mohua iwi, Manawhenua ki Mohua, speak of their high regard for Simon and their appreciation of how he has generously and enthusiastically shared his knowledge of taonga indigenous species.

“Simon has also contributed his knowledge and skills to many restoration projects in his Golden Bay community, including a project with local landowners planting an extensive native vegetation riparian corridor on both sides of the Onekākā River.”

Simon Walls worked for more than 30 years in public service to protect and preserve the unique plants of Aotearoa New Zealand. He was first with the Lands and Survey Department from 1967, and then with DOC from its formation in 1987 until he retired last year.

He was nominated for the Loder Cup by the Nelson Marlborough Conservation Board with supporting letters from Manawhenua ki Mohua, the Nelson Marlborough Institute of Technology, and the Nelson Botanical Society Inc.

UPCOMING EVENTS

If you have events or news that you would like publicised via this newsletter please email the Network (info@nzpcn.org.nz), prior to the published copy deadline With details of meetings, field trips or other events taking place during the following month or later. The deadline for copy for the following month’s *Trilepidea* is at the top of the front page of each issue.

If you intend to participate in one of the advertised botanical society meetings or field trips please check with the relevant society beforehand to confirm that the published details still stand.

Rotorua Botanical Society

Field Trip: Saturday 28 January to Monday 30 January (Auckland Anniversary weekend) to Rangitoto Station, northern Pureora. (Combined with Waikato Botanical Society) **Grade:** Easy to moderate.

Organiser: Del Hood, email dhood@xtra.co.nz, ph. 027 521 9260. Please let Dell know prior to Christmas if you intend to participate.

Field Trip: Saturday 11 February 2023 to Manawahe Ecological Trust. **Meet:** Rotorua carpark at 8.30am or at 1593 Manawahe Road at 9.30am. **Grade:** Medium.

Leader: Bill Clark, ph. 07 322 8401 or 021 0897 7261.

Waikato Botanical Society

Field Trip: Saturday 28 January to Monday 30 January (Auckland Anniversary weekend) to Rangitoto Station, northern Pureora. (Combined with Rotorua Botanical Society) **Grade:** Easy to moderate.

Organiser: Del Hood, email dhood@xtra.co.nz, ph. 027 521 9260. Please let Dell know prior to Christmas if you intend to participate.

Nelson Botanical Society

Field Trip/Meeting: Please refer to the website: <https://www.nelsonbotanicalsociety.org/trips-meetings> for details.

Botanical Society of Otago

Field Trip: Saturday 11 February 2023 to Kuriiti Creek, Hampden. Meet: Botany Department carpark (464 Great King Street North) at 9.00am.

Contact: Gretchen Brownstein, email brownsteing@landcareresearch.co.nz.

Meeting/Outing: Wednesday 15 February after hours visit to Tuhura Otago Museum. Limited to 30 persons. Meet: Otago Museum foyer at 5.20pm.

Contact: Gretchen Brownstein, email brownsteing@landcareresearch.co.nz to confirm your participation.
