



TRILEPIDEA

Newsletter of the New Zealand Plant Conservation Network

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Deadline for next issue:
Friday 15 January 2021

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 events@nzpcn.org.nz

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NEW ZEALAND

PLANT OF THE MONTH, p. 2



Notothlaspi rosulatum. Photo: Rowan Hindmarsh-Walls.



The President and team at the New Zealand Plant Conservation Network wish members all the very best for a safe and enjoyable festive season and also for the year ahead. Hopefully you'll find some time to get into the outdoors, discover some plants that are new to you, and then share those discoveries with us, so that we in turn can share them with others. Send details via email to info@nzpcn.org.nz.

President's message

John Barkla (mjbarkla@xtra.co.nz)

Last month's NZPCN AGM was notable for being the first we've conducted over the internet and capped off a remarkable year. Thanks to all of you who participated and especially to Rowan Hindmarsh-Walls for his presentation on the stunning plants of the Paparoa Coast. At the AGM our President Rewi Elliott stepped down after several years of leading NZPCN. Rewi can be proud of the many achievements of the Network over his term and his President's report touched on the most recent of these.

So, it's with some trepidation that I agreed to take over the President's role. In part I was persuaded by the knowledge that the real work gets done by the combined effort of our Administrator, Council members and our willing band of co-opted helpers. They're a supportive bunch with a wealth of experience, so what could possibly go wrong!

The Network is in good heart but we are conscious there are always things we can improve on. A mid-term review of our guiding strategy has given us a steer on where we need to lift our game. Raising awareness of the importance of plants, their habitats and conservation is especially important to us. We need to get better at using social media to get our message out there and could do with some help in achieving this (let me know if this sounds like you). We're also keen to grow the Endowment Fund so we can financially support conservation action.

Our flagship website has undergone a major refresh. While this may not be especially obvious to users yet, it has paved the way for many exciting advances. Among these, members can expect to see improvements in the quality and viewing of images and more comprehensive coverage of species' descriptions.

We are beginning to plan for the next conference in early 2022, in Queenstown. Look out for further announcements around that as the organising committee swings into action.

I've just returned from a week's field work assessing the current status of some of our most threatened taxa on the brink of extinction. It's a poignant reminder that all is not well for an increasing number of our indigenous plants. For me, it reinforces the importance of our Network's resources in empowering our members to appreciate, understand and conserve our amazing flora heritage.

PLANT OF THE MONTH – *NOTOTHLASPI ROSULATUM*

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

The plant of the month for December is the Penwiper, *Notothlaspi rosulatum*, one of three *Notothlaspi* species endemic to the New Zealand region. Like most of the other mainland New Zealand species, *N. rosulatum* is found in montane to alpine habitats. The species is a scree or stony ground specialist, and the grey plants blend in so well with their greywacke substrate they are often quite hard to pick out amongst the stones. Plants can be seen in low to mid alpine areas of the drier eastern half of the South Island, from Marlborough to north Otago. Individual plants can live for a number of years and consist of a short, single flattened rosette of leaves. Large plants flower only once before dying from the effort. The cream flowers are positioned on a flowering stem arising from the centre of the leafy rosette. Once pollinated, large flattened fruit form, maturing from the bottom of the spike upwards.



Notothlaspi rosulatum, Rag and Famish Creek, Molesworth Station, 4 December 2020. Photos: Rowan Hindmarsh-Walls.

Notothlaspi rosulatum is similar in appearance to the other two *Notothlaspi* species, *N. australe* and *N. viretum*, but differs in that it has only ever one rosette of leaves per plant, while the other two generally have multiple leafy rosettes. *N. viretum* is only found in ultramafic areas in the Richmond range, out of the range of *N. rosulatum*.

The species is endemic to New Zealand and is currently listed as Not Threatened, as it is the most widespread of the three *Notothlaspi* species and, although scattered, is not uncommon within its range. Being a brassica the species is highly palatable, and is sometimes browsed by hares, tahr, chamois, and goats. Unlike some of the other native brassica genera it does not appear to be as susceptible to many of the exotic brassica diseases, but can sometimes get infestations of aphids.

The genus *Notothlaspi* is endemic to the New Zealand region. It is in the cabbage family, Brassicaceae, along with other distinctive alpine genera such as *Pachycladon* and *Cardamine*. The genus name *Notothlaspi* means 'southern *Thlaspi*' (pennycress), from the Greek 'Notos', southern, and '*Thlaspis*', cress. The species epithet *rosulatum* means rosulate - forming a rosette, and is a reference to the plants form.

You can view the NZPCN website factsheet for *Notothlaspi rosulatum* at: <https://www.nzpcn.org.nz/flora/species/notothlaspi-rosulatum/>

Bristle fern found on Kapiti Coast

Pene Burton Bell(pburtonbell@gmail.com)

The locally rare [bristle fern \(*Trichomanes elongatum*\)](#) was a welcome find by Te Papa's Curator of Botany, Leon Perrie, on a recent walk with the Wellington Botanical Society.

While not endangered elsewhere in New Zealand, this fern was recently defined as being regionally critical in GWRC's report [Conservation Status of Indigenous Vascular Plant Species in the Wellington Region](#). Leon Perrie says there are only about 55 plants known in the Kapiti region, so even with the 13 identified on this walk, that's still well under the threshold of 250 individuals for Regionally Critical.



Trichomanes elongatum, Kapiti Coast, 3 October 2020. Photo: Leon Perrie.

Which Kunzea is that?

Bec Stanley, Curator, Auckland Botanic Garden(rebecca.stanley@aucklandcouncil.govt.nz)

Auckland Botanic Gardens has acquired all ten species of kanuka following Peter de Lange's revision of NZ *Kunzea* (de Lange 2014). Conservation and Records Specialist Emma Bodley worked with many NZPCN members to source them from 2015-2017. They are now all planted along one stretch of pathway, between the native plant and threatened plant collections, and all are labelled (Fig.1).

A new revision of a well-known plant can cause confusion and seeing the plants growing together is one way to help see their differences by bringing the taxonomic revision to life. Botanic Gardens are easily accessible locations and we can arrange collections to tell stories. This collection shows the range in the Genus and enables visitors to compare the various *Kunzea* spp. and learn identifying characters of each to enable determination in the field.



Fig.1. Every plant has a label.

Kunzea spp. are important early successional species in NZ and are often collected for forest restoration, so knowing what you are collecting is very important. It is very common to see eco-sourced "*Kunzea ericoides*" being sold in Auckland, for example, but as this is a species only known from the northern South Island what is actually being sold is more likely to be *K. robusta* (and from western coastal locations perhaps *K. amathicola*). We also record data on flowering (Fig 2.) and fruiting times which may help inform seed collecting for any future restoration projects by indicating a collection window.



Fig.2. Flowering times are noted.

All species in *Kunzea* in NZ are listed as threatened because of the incursion of myrtle rust and the threat this may pose to this Genus which is in the Myrtaceae family. The collection is monitored monthly to determine which, or if any, are susceptible to myrtle rust. So far, no myrtle rust has been detected on any *Kunzea* despite the presence from time to time of myrtle rust at the Gardens.

In the future we hope to get funding to interpret the collection to help visitors understand the multiple characteristics of plants that taxonomists use to differentiate between species.

Reference

de Lange, P.J. 2014: A revision of the New Zealand *Kunzea ericoides* (Myrtaceae) complex. *Phytokeys* 40: 185 p. [doi: 10.3897/phytokeys.40.7973](https://doi.org/10.3897/phytokeys.40.7973).

***Utricularia australis*—A survivor?**

Bill Campbell (billcampbell@xtra.co.nz)

Utricularia australis is a rarely seen member of the bladderwort family, now confined to peat based lakes, pools and streams in the North Island. The current threat classification is Nationally Critical (de Lange et al 2018), largely due to declining habitat and the threat posed by the introduced *Utricularia gibba*, which forms dense mats clogging the habitat preferred by *U. australis*.

A reasonable sized population was observed by the author at Lake Ohia a number of years ago and subsequent visits to the site indicated a stable population showing a preference for sheltered backwaters of the “permanent” open water body at Lake Ohia. Lake Ohia is not a lake as such but rather a shallow basin lying over a sandstone pan that supports a number of open water bodies, some of which are present on a more or less permanent basis and others which only exist after prolonged wet weather. There is one reasonable sized area that usually has open water to knee deep all year round, although that changed following Northland’s drought of late 2019 and the early to mid-part of 2020.

A visit to the site on 17 January 2020 with a group from the Wellington Botanical Society revealed a sad and sorry sight. The “permanent” water had completely disappeared, leaving behind a landscape that crackled and crunched under our feet as we walked across it (Fig. 1). The only water we saw in the area was one small water-filled gum hole, which didn’t appear to support anything in the way of plant life (Fig.2). The *U. australis* site was completely devoid of water and also dry and crackly underfoot. Although *U. australis* is known to produce turions—hardened buds that allow it to survive unfavourable periods—we did not know whether this population had done so. Accordingly, we had grave reservations about its future here, more so when the drought conditions prevailed well into June 2020.



Fig. 1 (left): The parched surface of Lake Ohia on 17 January 2020.

Fig. 2 (right) We found only one small water-filled gum hole. Photos: Andrew Townsend.

While in the vicinity with Andrew Townsend and his son Liam on 10 December 2020 to observe other threatened plant species we decided to check out the site where the *U. australis* had been known previously. To get to the site we had to wade through mud and water up to almost knee deep, which was the first promising sign. Initially we struggled to find anything other than *U. gibba*, which is now well established and expanding its range in this locality. The good news is that we eventually located a healthy population of *U. australis* (Fig.3) which indicates that the species can survive without the water in which it lives for at least six months. Whilst this indicates that it has some coping mechanism to deal with drought conditions, possibly the turions, we are not confident about its long term ability to cope with the ever increasing threat posed by the encroachment of *U. gibba* into its habitat (Fig.4). This highly invasive species is now established in many far north wetland environments and is, without

doubt, the single biggest threat now to the ongoing survival of *U. australis* in the region. There is nothing that human intervention can do to alleviate this threat, so all we can do is wait to see how much of a survivor *U. australis* really is.



Fig. 3: *Utricularia australis* at Lake Ohia on 10 December 2020.

Fig. 4 (right): The invasive *Utricularia gibba* is encroaching on the habitat of *U. australis* at Lake Ohia. Photos: Andrew Townsend.

Acknowledgement

Thanks to Andrew Townsend for his helpful contribution to the text and photos.

Reference

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., Breitweiser, I., Schonberger, I., Hindmarsh-Walls, R., Heenan, P. B., Ladley, K. 2018: Conservation of New Zealand indigenous plants, 2017. *New Zealand Threat Classification Series 22*. Department of Conservation.

The plight of *Pimelea villosa*

Jo Bonner, Coastlands Plant Nursery (coastlandspn@xtra.co.nz)

Pimelea villosa is endemic to New Zealand, which means it is only found in New Zealand and nowhere else. Other names for this species are: New Zealand sand daphne, autetaranga and toroheke. Its current conservation status (2017) is “At Risk – Declining” and this status is expected to be worse when the next assessment is completed.

It is a multi-branched sprawling shrub with a bluish hue and open-branching habit (Fig. 1). The hairy branches (often covered by sand) bear pairs of pointed leaves that have long hairs on the underside which protect them from the heat, trap sand and prevent extreme water loss (Fig 2.). Hairy white or cream-coloured flowers appear from September to March, arranged in clusters approximately 1cm in size (Fig. 3). They are easy to spot now as they are in full flower. The flowers are followed by black, red, pink, or white fruits in summer, which are eaten by lizards and birds. Unfortunately, rodents eat them too and this is why there is limited reproduction of plants in the wild.



Fig. 1 (left): *Pimelea villosa*, Spirits Bay, Northland. Fig. 2 (centre): long hairs on the undersides of the leaves. Fig. 3 (right): inflorescence. Photos: Jeremy Rolfe.

The species is confined to sand dunes and associated exposed swales and flats in back-dune areas: usually free draining sites. It can be found in full sun or part shade, often in the same sites as *Coprosma acerosa*. It does not like competition from weeds.

Distribution throughout New Zealand is localised, with only three naturally growing plants left in the Bay of Plenty, a small population in Northland, a handful in Kawhia, declining populations in Foxton and Castlepoint and small pockets in the South Island.

The Coromandel is lucky enough to have thirty plants growing wild at Cooks Beach. Some are extremely healthy but other, older, plants perished in last summer's heat. Seven plants were left growing under pine trees at Matarangi, adjacent to the golf course. They are probably still in this area due to the lack of competition under the trees but again, last year's heatwaves have claimed five, so now there are only two left in that location.

It is important that you contact your local flora expert from the Department of Conservation or Regional Council if you find these plants growing naturally. Their vulnerability to climate changes is obvious and helping preserve areas where they grow is an important step to helping protect them from further decline and possible local extinctions.



Botanists and/or Vegetation Ecologists Wanted Now at Wildland Consultants in Rotorua and Christchurch

Senior positions open in both the Rotorua and Christchurch Wildland Consultants' offices. Senior job opportunities with one of New Zealand's leading ecological consultancies, joining over 100 staff throughout NZ and the opportunity to continue or develop your career in ecology and ecological restoration. You will work on a wide range of projects, applying sound ecological principles.

A junior or intern botanist/ecologist position is also available in Rotorua for the right candidate.

See <https://www.wildlands.co.nz/company/jobs-at-wildlands> for more details.

Native Plants for Native Insects

Janine Thompson, Earthlore Wildlife Gardens, The Catlins (earthlore3@gmail.com)

What to do on a recently purchased 10 acre block in The Catlins? This is what my husband and I were pondering back in 2007. Being two people passionate about nature and conservation, it was always going to be somewhere where we could make a difference. Several ideas later we settled on creating a haven for arguably the planet's most unloved group of creatures but also the most essential. That's right—*insects*. And then to open our place to the public so people could come and learn about these amazing little guys.

So unappreciated, yet so important, where would we be without these tiny heroes? Wading through mountainous piles of pooh, carcasses and other things we would rather not step in, and with nothing to eat. Up the proverbial without a paddle. Insects are the ultimate recyclers and have the dubious honour of being one of the founding links in the food chain.

So, what was the first step in creating this insect arcadia? Research and much question asking of New Zealand's most excellent insect champions, aka entomologists (also in my opinion a much underappreciated group of creatures).

The result turned out to be quite obvious really; native plants support native insects. And if the plants are endangered then so are the creatures that call them home (or lunch).

Take a walk through our 'Insect Conservation Habitat' today and, rubbing shoulders with more common species, you'll find many native plants now endangered in the wild. Like small-leaved olearias, which as a group support at least 41 species of moth at the last count, all endemic to New Zealand. *Olearia hectorii* alone is host to 23 different species with 12 of these specialists. But its threatened status is up there alongside kākāpō. It's just not quite so cute and cuddly. Other members of this illustrious group here are *O. fragrantissima*, *O. bullata*, *O. lineatea* and *O. laxiflora*.

Kākābeaks (*Clinanthus*) are here too, browsed to near extinction in the wild due to their general

yumminess by the usual cohort of introduced pests. They are host to a native mite, *Aceria cianthus*, which unsurprisingly is also threatened.

We've also planted as many different kōwhai species as we can find, including *Sophora molloyi* and *S. fulvida*. Kōwhai are host to the kōwhai moth and one of the smallest moths in the world, the kōwhai leaf miner moth.

Then there is the *Muehlenbeckia* family, hosts for copper butterflies (Fig. 1), and many veronicas including *V. speciosa*, which have the tiny flowers needed to provide nectar for these tiny butterflies, with their tiny proboscises. And we are also the crazy people that have planted a number of ongaonga or *Urtica ferox*, to satisfy the needs of red admiral butterflies (Fig. 2).



Fig.1 (left): *Vanessa gonerilla* (Red Admiral) caterpillar on host plant *Urtica ferox*. 20 September 2020.

Fig.2 (right): Copper butterfly on *Hebe pinguifolia* "Sutherlandii". 11 December 2020.

Some of these plants are out of their natural distribution range down here, but we have planted them partly for diversity, and partly for education and awareness for visitors who come here. But also because it's nice to know that we are caring for something that if it ever disappears in the wild, there will be a small pocket of these treasures in The Catlins.

And that just might make a difference.

Spinifex trouble

Jo Bonner, Coastlands Plant Nursery (coastlandspn@xtra.co.nz)

What is happening to the spinifex, *Spinifex sericeus*, kōwhangatara plants?

At this time of year, the spinifex seed head is a summer icon, destined to run down the beaches in children's races, propped on the dashboard as a reminder from your favourite beach or washed up in the tide.

Spinifex sericeus is our first coastal defense against spring tides, protection from storm events and coastal erosion, one of the few native plants that grows toward the sea. After a scarp has formed from large waves the spinifex runners then grow back toward the sea trapping sand as the winds blow and this returns the beach to its natural gradient enabling the beach to recover.

In early summer each year, onshore and offshore winds determine the amount of pollination taking place within the spinifex seed heads, with the ultimate winds blowing down the beach through the male wheat like heads and onto the female spikes. In naturally occurring dunes you will find large areas of all male plants and then large areas of all female plants so having the winds blow the length of the beach is imperative to good seed pollination success.



The distinctive spinifex 'tumbleweed' seed head.
Photo: Jeremy Rolfe.

An interesting observation is when planting a mix of male and female plants into an area, the plant mix remains unchanged for the first five years but after that slowly changes to either a male or female colony, reverting to a natural placement.

For many years spinifex seed has been relatively easy to collect. Nurseries collecting for propagation have collected near male heads and have had good success, although there have always been natural differences between east and west coast seed viability and quantities. Twenty years ago, east coast sourced seed had 15–20 good fertile seeds in one seed head while west coast seed had up to 50 per seed head!

Nowadays the east coast seed has only between 5 and 10 good fertile seeds and the west coast has at most 15–20 good fertile seeds. This is a 50% decline! It is worth noting that these quantities are based on seed collection in natural areas, not planted areas, which have greater success due to the mix of male and female plants as mentioned above.

The other issue is spinifex smut, which is now abundant on most beaches throughout NZ. This fungus *Ustilago spinifex* infects both the male and female flowers. The female seed heads contain **no** viable seed once the black spore masses are present. Little is known about this disease except that it also affects wheat crops where it has been largely controlled by pesticides.

So, what is happening to the spinifex? Are the natural wind patterns changing at crucial pollination times? Is the effect of changing climatic conditions contributing to large areas of spinifex being infected by fungus smut, leading to poor or no pollination?

The Coastal Restoration Trust of NZ is planning to find the answers. Any feedback on this issue, please email coastlands@xtra.co.nz or info@coastalrestorationtrust.org.nz

Friends of Maara Roa Project

Brenda Johnston, Friends of Maara Roa (Inc.) (info@maararoa.org.nz)

Friends of Maara Roa has been working in Belmont Regional Park since 2000. This incorporated society began working in the area beyond the Lake Reserve. After 16 years they moved their focus to an area behind Porirua College referred to as College Corner. From almost the beginning the Greater Wellington Regional Council has provided money and help to enable the group to undertake planting, pest control and tree care in the area. Head Ranger for western parks Wayne Boness and Belmont Park Ranger Jeremy Patterson have been invaluable.



Planting in the Golden Hectare. 2 June 2018. Photo: © Friends of Maara Roa (Inc.)

The group had a nursery which was at Porirua College until 2003 when it shifted to Aotea College. The group is working to foster relationships with both colleges. In the last couple of years a remote controlled mulcher has cleared large areas of land both at College Corner and nearby at the Golden Hectare. This year the mulcher moved up the track to clear land at an area referred to as 'Glenys' seat' in memory of a long-time member active in maintaining possum lines. Since the mulcher is able to clear large areas of ground most of this is being planted by contractors. The plants that are grown on at Aotea College are being planted in clearings by our own volunteers.

Like all restoration groups Friends of Maara Roa is looking for more volunteers. There is nursery work at Aotea College on Thursday mornings from 10am until 12.30 pm, planting in winter and tree care the rest of the year on Saturday mornings from 9.30am until 12.30pm. There is also pest control. To find out more about volunteering ring Sef Truyens on (04) 234 7747 or Janet Tyson on (04) 478 3538.

UPCOMING EVENTS

If you have events or news that you would like publicised via this newsletter please e-mail the Network (events@nzpcn.org.nz).

Auckland Botanical Society

Meeting: Next meeting 3 March 2021 at 7.30pm.

Venue: Unitec, School of Natural Sciences, 139 Carrington Road, Mt. Albert (Gate 4, Building 115, Room 1028).

Field Trip/Camp: Saturday 29 January to Monday 1 February 2021. Summer camp in Taranaki.

Leader: Geoff Davidson.

Rotorua Botanical Society

Field Trip/Camp: Saturday 23 January to Monday 25 January 2021. Auckland Anniversary weekend trip to Mokau (combined with Waikato Botanical Society). **Meet:** Outside the River Run Café on SH 3 at 10.00am. **Grade:** Easy-Medium.

Leader: Thomas Emmitt.

Waikato Botanical Society

Field Trip/Camp: As above.

Wellington Botanical Society

Field Trip: Saturday 13 February: Mt. Climie, Remutaka Forest Park. **Note:** Second Saturday. We will drive in 4wd vehicles from Tunnel Gully, Te Mārua to North Climie, 830 m and Climie No. 2, 860 m. We will botanise subalpine plant communities on the ridge, then along spur to 835 m, then forest towards 775 m. Be prepared for strong winds; bring sun protection. **Bookings:** essential as numbers limited to available 4wds. **Meet:** 9.30 a.m. at Tunnel Gully car park, off the end of Plateau Rd, Te Mārua. **Train:** 8.05 a.m. on Hutt Line from Wellington to Upper Hutt. Ask co-leaders to meet you there. **Map:** Parkmap Rimutaka & Haurangi Forest Park, or NZTopo BP32 + BP33 + BQ32.

Co-leaders: Jon Terry Jon.Terry.NZ@gmail.com 021 168 1176, Helen White helenamywhite@gmail.com 022 413 5194.