



TRILEPIDEA

Newsletter of the New Zealand Plant Conservation Network

No. 222

September 2022

Deadline for next issue:
Friday 21 October 2022

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

Postal address:

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NEW ZEALAND

PLANT OF THE MONTH, p. 2



Petalophyllum preissei. Photo: Rowan Hindmarsh-Walls.

Otago botanical hotspot—Sutton Salt Lake Scenic Reserve

John Barkla (mjbarkla@xtra.co.nz)

Sutton Salt Lake is New Zealand's only inland salt lake, with water about half as salty as seawater. With no outlet, the lake has concentrated salts from surrounding soils as it has repeatedly filled, evaporated and refilled. Nestled amongst the spectacular parallel rock tor ridges of Sutton, with a backdrop of the Rock and Pillar Range (Figure 1.), the c. 8 ha lake occupies an enclosed shallow basin in the schist rock landscape.



Figure 1. Sutton Salt Lake with backdrop of Rock and Pillar Range. 25 October 2015. All photos: John Barkla.

The lake reaches a depth of only about 30 cm when full although in a dry summer it dries up completely to become a cracked bed of silt (Figure 2.). A range of salt-tolerant herbs occupy the lake margins. These include *Lilaeopsis novae-zelandiae*, *Oxybasis ambigua* (Figure 3.), native celery (*Apium prostratum*) and *Selliera microphylla*. In spring a small population of the nationally critical *Crassula peduncularis* and nationally vulnerable New Zealand mousetail (*Myosurus minimus* subsp. *novae-zelandiae*) (Figure 4) may be present. A range of water birds and waders use the lake, feeding on the tiny salt-adapted aquatic animals, including copepods, rotifers and water beetles.

Elsewhere in the 143-ha scenic reserve, rock tors provide ledge habitat for a range of herbs including a small forget-me-not (*Myosotis australis* subsp. *australis*), while numerous small shrublands contain species such as desert broom (*Carmichaelia petriei*), poataniwha (*Melicope simplex*), korokia (*Corokia cotoneaster*) and matagouri (*Discaria toumatou*).

PLANT OF THE MONTH – *PETALOPHYLLUM PREISSEI*

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

The plant of the month for September is the liverwort *Petalophyllum preissei*, one of only two *Petalophyllum* species native to the New Zealand region. In New Zealand, the species is only found in a small reserve just north of Kaikōura. It also occurs in Australia but is uncommon there as well. The species was once more widespread around New Zealand, as is evidenced from herbarium records, but has disappeared from all locations other than the Kaikōura site. It lives on damp clay banks of limestone origin in semi-shaded locations. The species does not seem to tolerate deep shade and appears not to associate well with most large, clumping fern species. The current populations are living under open shrubland, in close association with exotic grasses and herbs.

The plants are small (about the size of a fingernail) and thallose, with the bright green thallus resembling a tiny lettuce. It has a midrib with two wings on either side of it, and rhizoids (root-hair like structures) on the lower surface.



Petalophyllum preissei, north of Kaikoura, 31 August 2022: (left) close-up view; (centre) with fingernail for scale; (right) showing habitat. Photos: Rowan Hindmarsh-Walls.

The species is most similar in looks to the other native species of *Petalophyllum*, *P. hodgsoniae* and can only readily be distinguished by an expert bryologist, but to a novice like me, species in the genus seem fairly distinctive and different from other liverworts.

P. preissei has a threat status of 'Threatened– Nationally Critical', as it has drastically declined across its range and is only found in one general location, with the total population containing less than 100 plants. It is probably threatened by exotic weed species, but the impacts on the species of the associated herbaceous and grassy weeds is not known. At the known location there were previously two separate populations recorded, one with the bulk of the known plants and another with a few unhealthy looking plants. During a recent survey, this second small population appears to have been removed by bulldozer at some point in the recent past. A new location with only 1 plant was located some distance from the other known sites. The population seems to have remained fairly stable over the last three surveys but is extremely vulnerable to extinction. It is quite possible that more plants are present in the wider area, but searching for them is like trying to find a needle in a haystack, as the species is very small and often hidden by other vegetation. Further survey work is needed to ascertain the extent of the species, and try and locate any undiscovered populations. Ex-situ cultivation may be another tool to stop the species going extinct in this country.

The genus *Petalophyllum* is small, with only 5 species worldwide, although the more common species are scattered across much of the globe. As far as I'm aware both the New Zealand species are also found overseas, but are both very rare across their ranges.

The genus name *Petalophyllum* or 'thin plate-like leaf' is from the Greek *petalon*, or 'thin plate' and *phyllon* or 'leaf'. The species is named after J. A. H. Preiss, who first collected the species in Australia.

You can view the NZPCN website factsheet for *Petalophyllum preissii* at: <https://www.nzpcn.org.nz/flora/species/petalophyllum-preissei/> but currently it is very sparse in information.

If any bryologists out there are keen to help survey for the species please get in touch: rhindmarsh@doc.govt.nz.

Grasslands abound, comprising both native and exotic species. Of significance is a large population of At Risk – Declining slender bristle grass (*Rytidosperma merum*) with its long drooping and trailing culms. Two species of speargrass are present amongst the grassland; the common golden speargrass (*Aciphylla aurea*) and the uncommon *Aciphylla subflabellata*.



Figure 2. Cracking mud margin of rapidly diminishing Sutton Salt Lake. 25 October 2015.



Figure 3 (left): *Oxybasis ambigua* is common around lake margins. 6 February 2018.

Figure 4 (right): Mousetail on seasonally damp slope above lake. 1 October 2016.

At least 25 threatened, at risk and data deficient plant species have been recorded (Table 1) in the reserve.

Table 1. Threatened, At Risk and Data Deficient taxa recorded from Sutton Salt Lake Scenic Reserve

Conservation status	Taxa	
Threatened – Nationally Critical	<i>Crassula peduncularis</i>	
Threatened – Nationally Vulnerable	<i>Juncus pauciflorus</i>	<i>Myosurus minimus</i> subsp. <i>novae-zelandiae</i>
At Risk – Declining	<i>Aciphylla subflabellata</i>	<i>Olearia lineata</i>
	<i>Carex buchananii</i>	<i>Oxybasis ambigua</i>
	<i>Carex tenuiculmis</i>	<i>Raoulia australis</i>
	<i>Carmichaelia petriei</i>	<i>Raoulia parkii</i>
	<i>Coprosma brunnea</i>	<i>Rytidosperma buchananii</i>
	<i>Coprosma intertexta</i>	<i>Rytidosperma merum</i>
	<i>Discaria toumatou</i>	
At Risk – Naturally Uncommon	<i>Anthosachne aprica</i>	<i>Crassula ruamahanga</i>
	<i>Chenopodium allanii</i>	<i>Juncus distegus</i>
	<i>Clematis quadribacteolata</i>	<i>Luzula traversii</i> var. <i>tenuis</i>
	<i>Crassula mataikona</i>	<i>Puccinellia walkeri</i>
Data Deficient	<i>Connorochloa tenuis</i>	

A circuit through the reserve, following a marked path, takes about one hour and there are several information panels along the way. Be prepared for hot dry conditions in summer. The lake and reserve are reached from Dunedin by taking State Highway 87 towards Middlemarch, then turning down Kidds Road at Sutton. The reserve is signposted and has good parking.

***Craspedia huriawa*, the Riuwaka woollyhead, a plant of marble and tumbling waters**

Melissa Hutchison, NZPCN Council member (melissa@tenax.co.nz)

I opened an email alert from the New Zealand Journal of Botany last month and was excited to read that another one of our enigmatic native woollyheads has been formally described: *Craspedia huriawa* (Breitwieser *et al.* 2022). I immediately added the species to my ‘wish-list’ of plants I’d like to see, and made a mental note to check it out next time I’m up in Nelson. Not long afterwards, after perusing my iNaturalist observations, I realised that I had in fact already seen this stunning plant! I hadn’t remembered it but had photographed this woollyhead on a previous outing to the Riuwaka Resurgence with my family and friends back in January 2017 (Hutchison 2017). We enjoyed watching our children splashing about in the cooling waters on a hot summer’s day, oblivious to the fact that we were within a stone’s throw of such a botanical treasure! (Figures 1–3).

Craspedia huriawa occurs only in a very restricted area along the Riuwaka River (note new spelling) at the base of Tākaka Hill, in the Pikikirunga Range (Breitwieser *et al.* 2022). Although it is morphologically similar to *C. minor* (see Breitwieser *et al.* 2022), it has been recognised as a distinctive entity for many years, and was previously known as “*Craspedia* (g) (CHR 469764; Pikikirunga)”. The species was classified as ‘Threatened-Nationally Critical’ because of its very small area of occupancy (≤ 1 ha) (de Lange *et al.* 2018).

The species epithet ‘*huriawa*’ refers to a female taniwha of Te Waikoropupū Springs and the interconnecting underground waterways of Tākaka Hill and Golden Bay/Mohua (Breitwieser *et al.* 2022). The etymology of the kupu ‘*huriawa*’ also seems particularly apt to me, with *huri* meaning to ‘turn round, revolve, turn upside down, overflow or spill over’ and *awa* meaning river or waterway – the dramatic resurgence of the Riuwaka River from beneath Tākaka Hill and the vibrant tumbling waters downstream flowing over marble have created a unique environment for this taonga to grow. I look forward to paying it proper homage next time I visit.



Figure 1 (left): *Craspedia huriawa*, Riuwaka woollyhead, January 2017. Photo: Melissa Hutchison.

Figure 2 (right): The compound head of *Craspedia huriawa* changes from hemispherical to globose at maturity. Photo: Felix Collins.



Figure 3: Riparian habitat of *Craspedia huriawa*, Riuwaka River, Tasman District (January 2017). The red arrow points to clusters of *C. huriawa* plants growing within the spray zone of the river. Photo: Melissa Hutchison.

References

- Breitwieser I., Courtney S.P. and Ford K.A. 2022: *Craspedia huriawa* (Compositae/Asteraceae, Gnaphalieae), a new species from Nelson/Tasman, South Island of New Zealand. *New Zealand Journal of Botany* 60 (online). <https://doi.org/10.1080/0028825X.2022.2109975>
- 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., Schönberger 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 pp.
- Hutchison M. 2017: Observation of *Craspedia huriawa* on the iNaturalist website. <https://inaturalist.nz/observations/4950467>. Date accessed: 25 September 2022.

NZPCN fact sheet images update

Jesse Bythell, NZPCN webmaster (jesse.bythell@gmail.com)

We are immensely grateful to all the generous people who have contributed images to our website over the years. To date there have been 322 photographers who have contributed over 31,000 photos. Of the 2,545 native vascular plant fact sheets on our website, only 66 of these lack any images, and these are listed below. Many of these species are rare and this is likely the key reason we lack any images for them.

If you have high quality images of these taxa and would like to share them with NZPCN and the wider community please get in touch with us at info@nzpcn.org.nz.

SCIENTIFIC NAME	COMMON NAME	FAMILY
<i>Azorella colensoi</i>		Apiaceae
<i>Gingidia amphistoma</i>		Apiaceae
<i>Craspedia diversicolor</i>	Wakanui woollyhead	Asteraceae
<i>Senecio linearifolius</i>	fireweed groundsel	Asteraceae
<i>Craspedia robusta</i>	woollyhead	Asteraceae
<i>Celmisia cordatifolia</i> var. <i>similis</i>	mountain daisy	Asteraceae
<i>Celmisia cordatifolia</i> var. <i>brockettii</i>	mountain daisy	Asteraceae
<i>Craspedia uniflora</i> var. <i>grandis</i>		Asteraceae
<i>Haastia recurva</i> var. <i>wallii</i>	Haastia	Asteraceae
<i>Brachyscome lucens</i>	Ward Beach daisy	Asteraceae
<i>Raoulia hookeri</i> var. <i>laxa</i>		Asteraceae
<i>Brachyglottis bellidioides</i> var. <i>bellidioides</i>		Asteraceae
<i>Leptinella intermedia</i>		Asteraceae
<i>Celmisia glabrescens</i>		Asteraceae
<i>Myosotis umbrosa</i>		Boraginaceae
<i>Myosotis amabilis</i>		Boraginaceae
<i>Myosotis elderi</i>		Boraginaceae
<i>Cardamine unicaulis</i>	cress	Brassicaceae
<i>Colobanthus squarrosus</i> subsp. <i>drucei</i>	colobanthus	Caryophyllaceae
<i>Colobanthus squarrosus</i> subsp. <i>squarrosus</i>	colobanthus	Caryophyllaceae
<i>Colobanthus hookeri</i>	Hooker's colobanthus	Caryophyllaceae
<i>Archeria traversii</i> var. <i>australis</i>		Ericaceae
<i>Trithuria brevistyla</i>		Hydatellaceae
<i>Hypericum gramineum</i>		Hypericaceae
<i>Luzula traversii</i> var. <i>tenuis</i>		Juncaceae
<i>Epilobium krulleanum</i>	willowherb	Onagraceae
<i>Caladenia minor</i>	caladenia	Orchidaceae
<i>Thelymitra intermedia</i>	sun orchid	Orchidaceae
<i>Microtis arenaria</i>		Orchidaceae
<i>Chiloglottis formicifera</i>	ant orchid	Orchidaceae
<i>Veronica cryptomorpha</i>	hebe	Plantaginaceae
<i>Veronica ciliolata</i> subsp. <i>fiordensis</i>		Plantaginaceae
<i>Hebe matthewsii</i>	hebe	Plantaginaceae
<i>Poa acicularifolia</i> subsp. <i>ophitalis</i>	ultramafic cushion poa	Poaceae
<i>Poa aucklandica</i> subsp. <i>campbellensis</i>	Campbell Island poa	Poaceae
<i>Poa aucklandica</i> subsp. <i>aucklandica</i>	Auckland Island poa	Poaceae
<i>Chionochloa flavescens</i> subsp. <i>lupeola</i>	snow tussock	Poaceae
<i>Lachnagrostis billardiarei</i> subsp. <i>tenuisetata</i>	wind grass	Poaceae
<i>Lachnagrostis leptostachys</i>	wind grass	Poaceae

SCIENTIFIC NAME	COMMON NAME	FAMILY
<i>Eragrostis leptostachya</i>	paddock lovegrass	Poaceae
<i>Festuca ultramafica</i>	serpentine fescue	Poaceae
<i>Festuca deflexa</i>		Poaceae
<i>Rytidosperma viride</i>		Poaceae
<i>Poa celsa</i>		Poaceae
<i>Poa dipsacea</i>		Poaceae
<i>Poa intrusa</i>		Poaceae
<i>Poa maia</i>		Poaceae
<i>Lachnagrostis glabra</i>	saltmarsh wind grass	Poaceae
<i>Poa xenica</i>		Poaceae
<i>Koeleria riguorum</i>		Poaceae
<i>Puccinellia antipoda</i>	Antipodes saltgrass	Poaceae
<i>Poa ramosissima</i>		Poaceae
<i>Agrostis subulata</i>		Poaceae
<i>Notogrammitis gunnii</i>	strapfern	Polypodiaceae
<i>Althenia bilocularis</i>		Potamogetonaceae
<i>Pteris epaleata</i>		Pteridaceae
<i>Ranunculus biternatus</i>		Ranunculaceae
<i>Geum albiflorum</i>	Auckland Island geum	Rosaceae
<i>Pimelea oreophila</i> subsp. <i>hetera</i>	pimelea	Thymelaeaceae
<i>Pimelea oreophila</i> subsp. <i>ephaistica</i>	pimelea	Thymelaeaceae
<i>Pimelea nitens</i> subsp. <i>aspera</i>	pimelea	Thymelaeaceae
<i>Pimelea hirta</i>	pimelea	Thymelaeaceae
<i>Pimelea dura</i>	pimelea	Thymelaeaceae
<i>Pimelea cryptica</i>	pimelea	Thymelaeaceae
<i>Pimelea aridula</i> subsp. <i>oliga</i>	pimelea	Thymelaeaceae
<i>Pimelea traversii</i> subsp. <i>boreus</i>	pimelea	Thymelaeaceae

Spring annuals in Central Otago

John Barkla (mjbarkla@xtra.co.nz)

Spring annuals, which complete their life history from seed to seed during a favourable season of the year, are rare in the New Zealand flora (Lloyd 1985). In a significant study of their ecology and status in New Zealand, Rogers et al. (2002) categorised just four taxa as spring annuals.

These four are mousetail (*Myosurus minimus* subsp. *novae-zelandiae*), *Ceratocephala pungens*, *Myosotis brevis* (*Myosotis pygmaea* var. *minutiflora* in Rogers et al 2002), and *Crassula colligata* subsp. *colligata* (*C. tetramera* in Rogers et al. 2002) (Figs. 1–4). All four germinate in winter or early spring, flower and fruit in spring, shrivel and die by early summer, and leave just seeds in the soil for the remainder of the year. They are all small, low growing plants, which are often less than 30 mm diameter.



Figure 1 (left): *Myosurus minimus* subsp. *novae-zelandiae*. All photos: John Barkla.
Figure 2 (right): *Ceratocephala pungens*.



Figure 3 (left): *Myosotis brevis*.

Figure 4 (right): *Crassula colligata* subsp. *colligata*.

Native spring annuals occur in both the North and South Islands but are more prevalent in the drylands of eastern South Island and are most concentrated in Central Otago. Rogers et al. (2002) describe subtle differences in habitats of the three threatened spring annuals and notes that all share a strong summer soil-moisture deficit and are found in genuine non-forest habitats as well as farming-induced mat vegetation on dry hillslopes. The small number of sites and small population sizes, often with extreme fluctuations, along with habitats that are vulnerable to weeds and changes in land use, result in a conservation status of ‘threatened’ for three of the taxa (Table 1).

Table 1. Conservation status of the four native spring annuals

Taxa	Common name	Family	Conservation status (de Lange et al. 2018)
<i>Ceratocephala pungens</i>		Ranunculaceae	Threatened – Nationally Critical
<i>Crassula colligata</i> subsp. <i>colligata</i>		Crassulaceae	Not Threatened
<i>Myosotis brevis</i>	Tiny forget-me-not	Boraginaceae	Threatened – Nationally Vulnerable
<i>Myosurus minimus</i> subsp. <i>novae-zelandiae</i>	New Zealand mousetail	Ranunculaceae	Threatened – Nationally Vulnerable

Chapman Road Scientific Reserve

At Chapman Road Scientific Reserve near Alexandra in Central Otago, all four native spring annuals are currently flowering and/or developing immature fruit. At this site, some occupy saline soils and form extensive mats that also include a range of exotic prostrate and mat-forming herbaceous plants. An on-site interpretation panel provides background on the reserve and its special features.

References

- 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.; Ladley, K. 2018. Conservation status of New Zealand indigenous vascular plants, 2017. New Zealand Threat Classification Series 22. Department of Conservation, Wellington. 82 p.
- Lloyd, D.G. 1985. Progress in understanding the natural history of New Zealand plants. *New Zealand Journal of Botany* 23: 707–722.
- Rogers, G., Walker S., Tubbs, M. & Henderson, J. 2002. Ecology and conservation status of three “spring annual” herbs in dryland ecosystems of New Zealand. *New Zealand Journal of Botany*, 40:4, 649–669, DOI: 10.1080/0028825X.2002.9512821.

NZPCN Website Updates

Jesse Bythell, NZPCN webmaster (jesse.bythell@gmail.com)

Now able to search for taxa occurrences within regional plant lists on our website

Users will be pleased to know they can again search for taxa through over 7,500 tabulated plant lists (the ones which can be downloaded as CSV files). The new search tool is a child page of Publications>Plants Lists and can be found here: <https://www.nzpcn.org.nz/publications/plant-lists/search-plant-lists/>

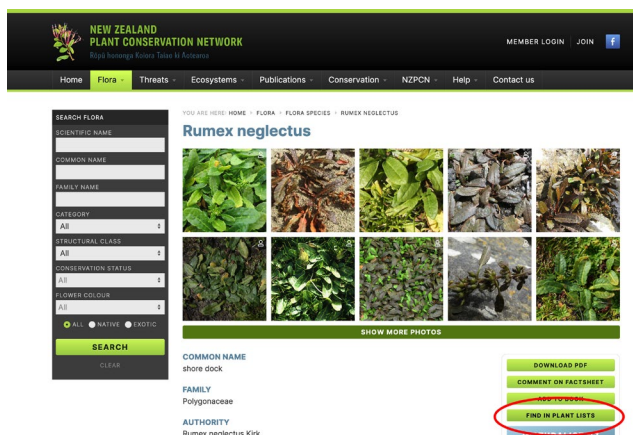
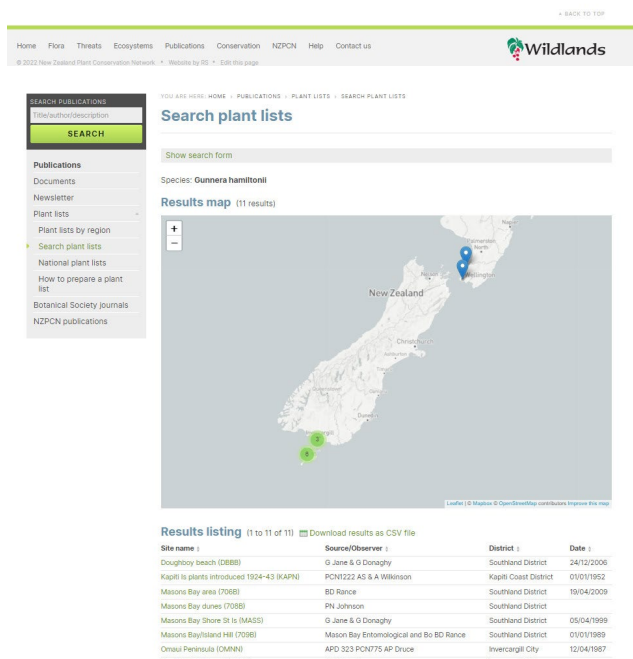
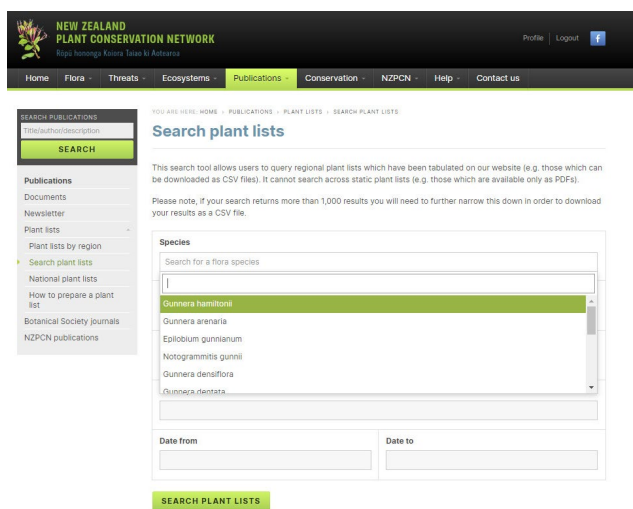
This search tool allows users to query regional plant lists that have been tabulated on our website (e.g. those that can be downloaded as CSV files).

This new tool lets you:

- Search for taxa across plant lists and filter your search by Region, Source/Observer, Site Name and Date.
- The search results also have a map interface to help navigate to what you're interested in
- Search results can be ranked the following columns Site Name, Date and District and individual species lists can be accessed via links from your search results.
- Search results can be downloaded as a CSV (only if there are fewer than 500, if more you will need to further filter your search
- CSV results also include links to the relevant plant lists and lat/long coordinates.
- You will be able to jump to a quick search through plant lists for a taxon from its fact sheet by clicking on the green 'Find in Plant Lists' button on the right of the page.

Tabulated (CSV) regional plant lists now sortable by columns

We've altered the way users can sort plant list content when viewed in the browser – now you can sort the table by the columns Species, Structural Class, Threat Status and Native/Exotic. To sort a column by A-Z or Z-A click on the symbol that looks like two triangles back to back next to the column title.



Papatowai Forest Heritage Trust Purchase

The Papatowai Forest Heritage Trust recently negotiated to buy sections of land along the waterfront at Papatowai in the Catlins. RNZ did a story about it, which is available via the link below.

<https://www.rnz.co.nz/national/programmes/ninetoon/audio/2018855815/protecting-the-southern-rata-in-papatowai>



Protecting the Southern Rātā in Papatowai

A Catlins conservation group has finally purchased a section of the Papatowai estuary behind an iconic stand of rātā - a deal it's been working on for several years. The Papatowai Forest Heritage Trust bought the 15 adjacent sections from the Findlater family creating what will be called the Findlater Reserve. The purchase is part of a wider effort to protect the Southern rata which hang over the beach at Papatowai. The land will be covenanted, joining other sections previously protected by the Trust.

www.rnz.co.nz

The purchase will secure a band of coastal forest which sits inland behind a band of southern rata on the shoreline (these are on an unformed legal road). It's a great achievement to consolidate these forest areas and some positive news. Members may wish to consider contributing financially to the project. For further details contact Fergus Sutherland (fergussutherland@icloud.com)

Closing soon – Nominations for NZPCN Plant Conservation Awards 2022

Sarah Beadel (sarah.beadel@wildlands.co.nz)

We are calling for nominations for the prestigious New Zealand Plant Conservation Network Awards 2022. The purpose of these awards is to acknowledge outstanding contributions to native plant conservation in Aotearoa/New Zealand.

Award categories are:

- Individual
- School
- Council
- Community
- Plant Nursery
- Young Plant Conservationist of the Year (under 18 years at 30 June 2022)

The nomination form is available from the Network website here: <https://www.nzpcn.org.nz/publications/documents/2022-nzpcn-award-nomination-form/>

We look forward to receiving your nominations; and encourage you to make multiple nominations under different categories.

Anyone is eligible to make nominations, not just Network members.

Nominations close on Friday 14 October 2022. Please email your nominations to sarah.beadel@wildlands.co.nz.

These prestigious awards will be presented at an event as part of the 2022 NZPCN conference in Queens-town on Tuesday 6 December 2022.

Winners will be informed in advance and each will get a pair of complimentary tickets to the awards event.

Bryophyte Workshop Cancellation

David Glenny has advised that the bryophyte and lichen workshop, which was planned to be at Staveley in early November this year, has been cancelled. The organisers felt there were not enough field sites in the area worth visiting. The plan now is to hold it in November 2023 at Arthur's Pass, with accommodation likely to be at Cass Field Station.

Thank you to our conference sponsors!

The NZPCN would like to thank our sponsors for showing their commitment to plant conservation networking by supporting our conference. For more information regarding our conference sponsors please follow this link <https://www.nzpcn.org.nz/nzpcn/events/conference-2022/2022-conference-sponsors/>.

If you or your organisation is in a position to show your support, please contact us now for a sponsorship package at fergusa@landcareresearch.co.nz.



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 20th of the month copy deadline for meetings, field trips or other events taking place during the following month or later.

If you are intending 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 stand.

Auckland Botanical Society

Meeting: Wednesday 5 October at 7.30pm. Details to be confirmed.

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

Waikato Botanical Society

Meeting: Monday 17 October at 6.00pm. **Speaker:** Kerry Jones.
Topic: Botanical experiences while living in Te Anau during 2022.

Venue: The Link (corner Te Aroha Street and River Road, Hamilton East).

Rotorua Botanical Society

Field Trip: Saturday/Sunday 8-9 October to Hauaero, Motu River.
Meet: At Motu Bridge at 9.00am on Saturday. **Grade:** Moderate to hard, with easy option also available.

Leader: Hirere Ngamoki, email hngamoki@doc.govt.nz, ph. 027 831 4306.

Field Trip: Saturday 15 October to Okareka Mistletoe Restoration Project. **Meet:** Corner Summit and Loop Roads, Okareka (lake end) at 8.45am. **Grade:** Medium-Hard.

Leader: Paul Cashmore, email pcashmore@doc.govt.nz, ph. 07 349 7432 (wk) or 027 650 7264.

Wellington Botanical Society

Meeting: Monday 17 October 2022. **Speaker:** Debra Wotton, Director and Principal Ecologist, Moa's Ark Research. **Topic:** Once in a lifetime: why is recruitment so rare in Canterbury braided river floodplains?

Venue: Victoria University, Wellington, Lecture Theatre M101, ground floor Murphy Building, west side of Kelburn Parade.

Nelson Botanical Society

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

Canterbury Botanical Society

Meeting: Monday 3 October at 7.30pm. **Speaker:** Cara-Lisa Schloots. **Topic:** The End Peak wetland complex.

Venue: St Albans Community Centre, 1049 Colombo Street, Christchurch.

Field Trip: Saturday 8 October to Waimakariri dryland kanuka forest. **Meet:** Peg Hotel, 899 Main North Road, Belfast at 9.00am. **Grade:** Easy to Medium.

Leader: Jason Butt, contact fieldtrips@canterburybotanicalsociety.org.nz or ph. 027 366 1246 if you intend to participate.

Botanical Society of Otago

Field Trip: Saturday 1 October to Mahaka Katia Scientific Reserve (Pisa Flats). **Meet:** Botany Department carpark (464 Great King Street North) at 8.00am.

Contact: David Lyttle, email djl1yttle@gmail.com, ph. 03 454 5470.

Meeting: Wednesday 12 October at 5.20pm. **Speakers:** Jess, Stella and Kacey. **Topic:** An Amalgamation of Cryptograms: A Showcase of their Dynamic Life Histories and Understated Role in the Ecosystem.

Venue: Main seminar room, Manaaki Whenua Landcare Research, 764 Cumberland Street, Dunedin.
