TRILEPIDEA
Newsletter of the New Zealand Plant Conservation Network

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Deadline for next issue:
Friday 21 August 2026

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:
73 Stratford Drive
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NEW ZEALAND

NZPCN 2026 Conference—Less Than Three Months to Go!

NZPCN 2026 Conference Organising Committee (2026nzpcnconference@gmail.com)

The countdown is on, with less than three months until the 2026 NZPCN Conference, *Māhia ngā here – Collaboration for Better Conservation*, in Te Whanganui-a-Tara, Wellington from 12–15 October 2026.

A huge thank you to everyone who has already registered and to those who have submitted abstracts for oral and poster presentations. We are looking forward to welcoming you in October.

With Early Bird registrations and the call for abstracts now closed, the organising committee is busy developing the conference programme. We have received a fantastic range of presentations, highlighting the breadth of plant conservation work taking place throughout the motu.

Interest in our workshops and field trips has been strong, with several already fully booked. The workshops *Learn Your Ferns*, *Coastal Species Propagation*, *Introduction to Herbarium Collections*, *Botanical Illustration* and *Pūrākau in Practice* are all fully booked. Our popular field trips to *Cook Strait* and *Above the Tree Line* are also fully booked. Limited spaces remain available on several other workshops and field trips, so be sure to check the conference website and secure your place soon.

Conference Sponsors and Supporters

The 2026 NZPCN Conference would not be possible without the generous support of our sponsors and supporters. Their contributions are helping us deliver an exciting programme of talks, workshops and field trips in Te Whanganui-a-Tara Wellington this October.

Greater Wellington Regional Council

Greater Wellington Regional Council, along with being a principal conference sponsor, is also providing valuable in-kind support for our field trips, two of which are being held in Greater Wellington Regional Parks.

Wellington Botanical Society

Wellington Botanical Society aims to encourage the study of botany and foster an interest in New Zealand native plants, especially in the field. The Society encourages the cultivation of native plants and advocates for the protection of lands and waters in their natural state.

Wildland Consultants

Wildland Consultants is a progressive ecological consultancy committed to providing high-quality ecological information, advice and technical services to a wide range of clients. Wildlands has been a consistent supporter of many past NZPCN conferences and is currently a co-sponsor of the NZPCN website.

In-kind Supporters

We would also like to acknowledge the organisations contributing their time, expertise, venues and support to workshops, field trips and conference organisation:

- Greater Wellington Regional Council
- Ngā Manu Nature Reserve
- Te Papa
- Te Tira Whakamātaki
- Wellington Airport
- Wellington City Council
- Zealandia

We sincerely thank all our sponsors and supporters for helping make the 2026 NZPCN Conference possible.

If you or your organisation would like to support the conference, please get in touch with the conference committee at 2026nzpcnconference@gmail.com or visit the conference website for sponsorship information.

For more information about our sponsors and the conference programme, please visit the conference website: https://www.nzpcn.org.nz/nzpcn/events/2026-nzpcn-conference/

Uncovering hidden diversity in *Senecio matatini*: are limestone forms distinct species?

Pieter B. Pelser, School of Biological Sciences, University of Canterbury, Christchurch (Pieter.Pelser@canterbury.ac.nz), Robb W. Eastman-Densem, School of Biological Sciences, University of Canterbury, Christchurch and School of BioSciences, The University of Melbourne, Australia, Peter B. Heenan, Allan Herbarium, Bioeconomy Science Institute, Lincoln.

Final report for David Given Scholarship (2023)

Introduction

Senecio matatini (Asteraceae) is an herbaceous daisy that is endemic to New Zealand. It is a morphologically and ecologically diverse species with a complex taxonomic history (Liew et al. 2021). Many populations of *S. matatini* were previously misidentified as *S. glaucophyllus*, which is a superficially similar, yet distantly related species (Liew et al. 2021). Following a taxonomic study that clarified the differences between *S. glaucophyllus* and *S. matatini,* four subspecies of *S. matatini* were

recognised: subsp. *basinudus,* subsp. *discoideus,* subsp. *matatini* and subsp. *toa* (Liew et al. 2021). However, it was recognised that more research would be needed to determine exactly how many species and subspecies need to be distinguished within the *S. matatini* group (Heenan & Rogers 2019).

Some populations of the *S. matatini* group inhabit herbaceous and grassland communities in the eastern parts of Te Waipounamu/South Island. Amongst these are populations that predominantly occur on limestone or other base-rich substrates and exhibit distinct morphologies compared to the four subspecies (Webb et al. 1988, Heenan & Rogers 2019). Five of these eastern South Island forms were assigned informal names:

1. *S.* aff. *matatini* "Cape Campbell": coastal Marlborough.
2. *S.* aff. *matatini* "Castle Hill": restricted to the Castle Hill basin in Canterbury.
3. *S.* aff. *matatini* "Mt Cass": mainly inland in South Canterbury but with one of two populations in North Canterbury.
4. *S.* aff. *matatini* "North Dean": inland and coastally in North Canterbury.
5. *S.* aff. *matatini* "South Marlborough Limestone": riverine habitat in South Marlborough.

A sixth limestone form of *S. matatini* is found in areas in the Tasman region. This form was named *S.* aff. *matatini* "Tablelands" (de Lange et al. 2024) and *S.* aff. *glaucophyllus* "Peneplain" (Rogers et al. 2018).

All six limestone forms in the *S. matatini* complex are of conservation concern. Four of the six forms have been classified as Threatened – Nationally Vulnerable (*S.* aff. *matatini* "Cape Campbell", *S.* aff. *matatini* "Mt Cass", *S.* aff. *matatini* "South Marlborough Limestone") or Threatened – Nationally Critical (*S.* aff. *matatini* "Tablelands"; de Lange et al. 2024). Additionally, *S.* aff. *matatini* "North Dean" only consists of small and sparse populations, while *S.* aff. *matatini* "Castle Hill" is also a narrow-range calcicole.

To better understand the boundaries between the different forms of the *S. matatini* group, and because species that are not clearly defined are often overlooked in conservation planning (Robertson et al. 2011, Rogers et al. 2018), we set out to determine whether the six limestone forms are sufficiently distinct to be formally recognised as species or subspecies. For this, we generated and analysed genetic data from these limestone forms and from the four currently recognised *S. matatini* subspecies to determine how they are related. By comparing their genetic patterns, we aimed to find out whether the limestone forms represent unique, naturally distinct groups. The results were then used to improve the classification of the *S. matatini* group so that it more accurately reflects its patterns of genetic and morphological diversity. This contributes to plant conservation by helping ensure that all distinct forms of *S. matatini* are formally named and clearly defined and can therefore be properly considered in conservation efforts.

Research methods

Samples of the six limestone *S. matatini* forms were collected from 14 populations in Canterbury, Marlborough and Tasman (Fig. 1). A few plants of subsp. *basinudus*, subsp. *discoideus*, subsp. *matatini* and subsp. *toa* from non-limestone areas were also included in our study so that we could determine if the limestone forms are genetically distinct from these. We extracted DNA from these samples in our lab at the University of Canterbury. The Elshire Group Limited (Palmerston North) subsequently generated a Genotyping-By-Sequencing dataset using these DNA samples. We then processed these data to obtain thousands of unique Single Nucleotide Polymorphisms (SNPs) from across the genome. We then processed this data set further, which involved amongst others excluding samples and parts of the data set that did not meet our quality standards. Our final data set consisted of 4,457 SNPs and 75 samples. Three different types of analyses of this data set were used to determine how genetically distinct the samples (and the populations they were obtained from) are from each other: a sparse non-negative matrix factorisation (snmf) LEA analysis, a Principal Component Analysis (PCA) and a SplitsTree analysis. We also used a Mantel test to determine to what extent patterns of genetic similarity

can be explained by the geographic distance between populations (i.e. isolation-by-distance).

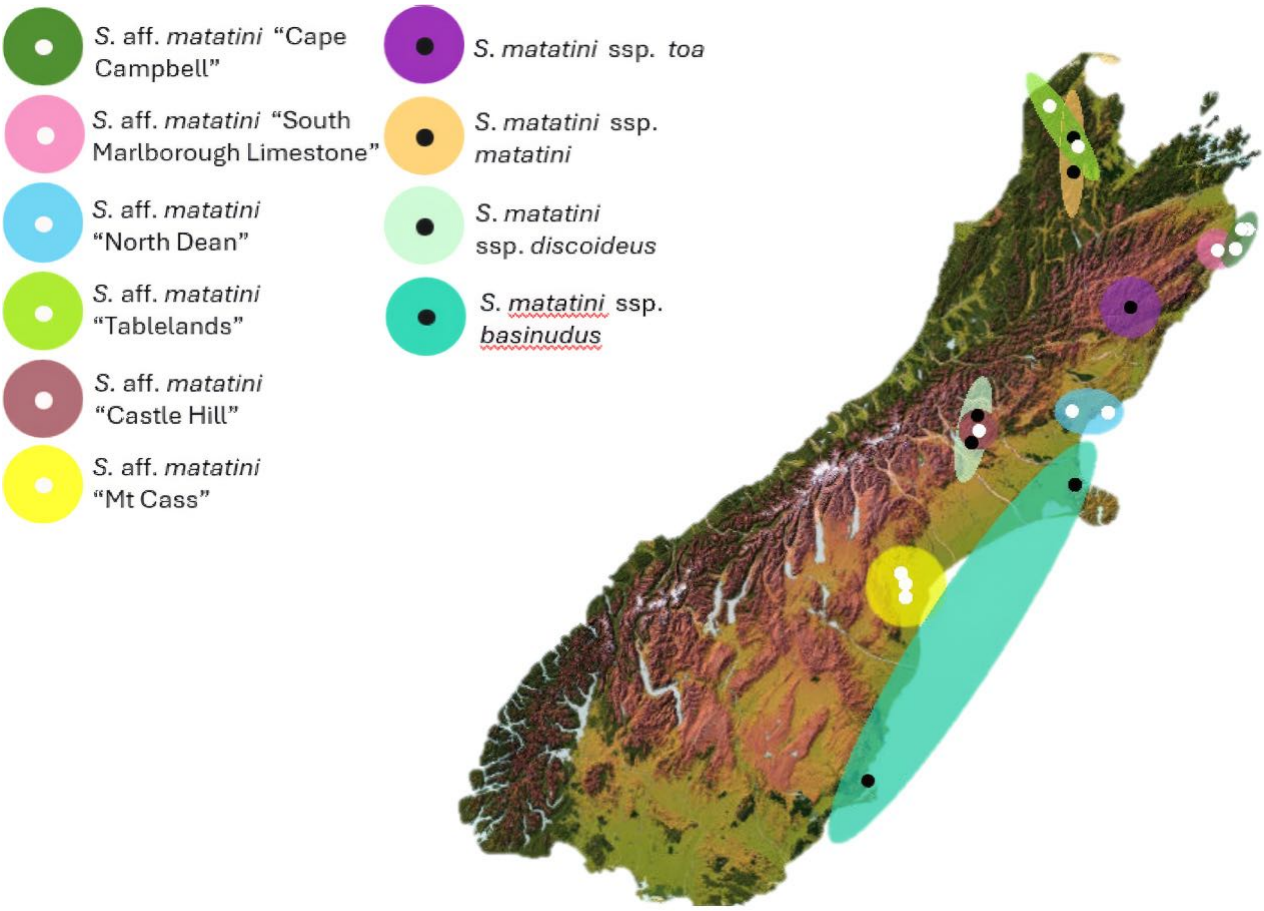

Figure 1. Map of *S. matatini* sampling locations.

Results and discussion

Genetic differentiation

The results of the various genetic analyses of our data best support the recognition of five genetic groups within *S. matatini* (K = 5 results in Fig. 2; only the snmf LEA results are shown here, see Patel et al. 2026 for results of other analyses). Subgroups can be recognised for some of these (K = 9 in Fig. 2). Although the five groups are for the most part genetically distinct, some show evidence of admixture among them, which suggests that they are not fully distinct, possibly due to past or present transfer of pollen or seeds among them (i.e. gene flow). Together with the strong correspondence between geographic and genetic patterns, and the results of the isolation-by-distance analysis (see Patel et al. 2026), this suggests that geographic distance plays an important role in shaping genetic structure within the *S. matatini* group, although its influence varies among taxa. For example, despite being separated by approximately 300 km, the two subsp. *basinudus* populations sampled for our study were genetically very similar. In contrast, the Mussel Point and Cape Campbell lighthouse populations of *S. aff. matatini* "Cape Campbell" showed clear genetic differences despite being only about 3 km apart.

Taxonomic recognition of the limestone forms of *S. matatini*

The results of our analyses show that four of the six limestone forms of *S. matatini* each form genetic groups or subgroups (Fig. 2). They are therefore genetically distinct from each other and the four subspecies. These are *S.* aff. *matatini* "Mt Cass" (Group 5 in Fig. 2), *S.* aff. *matatini* "Castle Hill" (a subgroup of Group 4), *S.* aff. *matatini* "South Marlborough Limestone (a subgroup of Group 3), and two populations of *S.* aff. *matatini* "Cape Campbell" (Group 2). However, despite being morphologically similar, the third population of the latter form (Needles Point) shows genetic affinities

with both *S.* aff. *matatini* "Cape Campbell" sensu stricto and the populations composing Group 3.

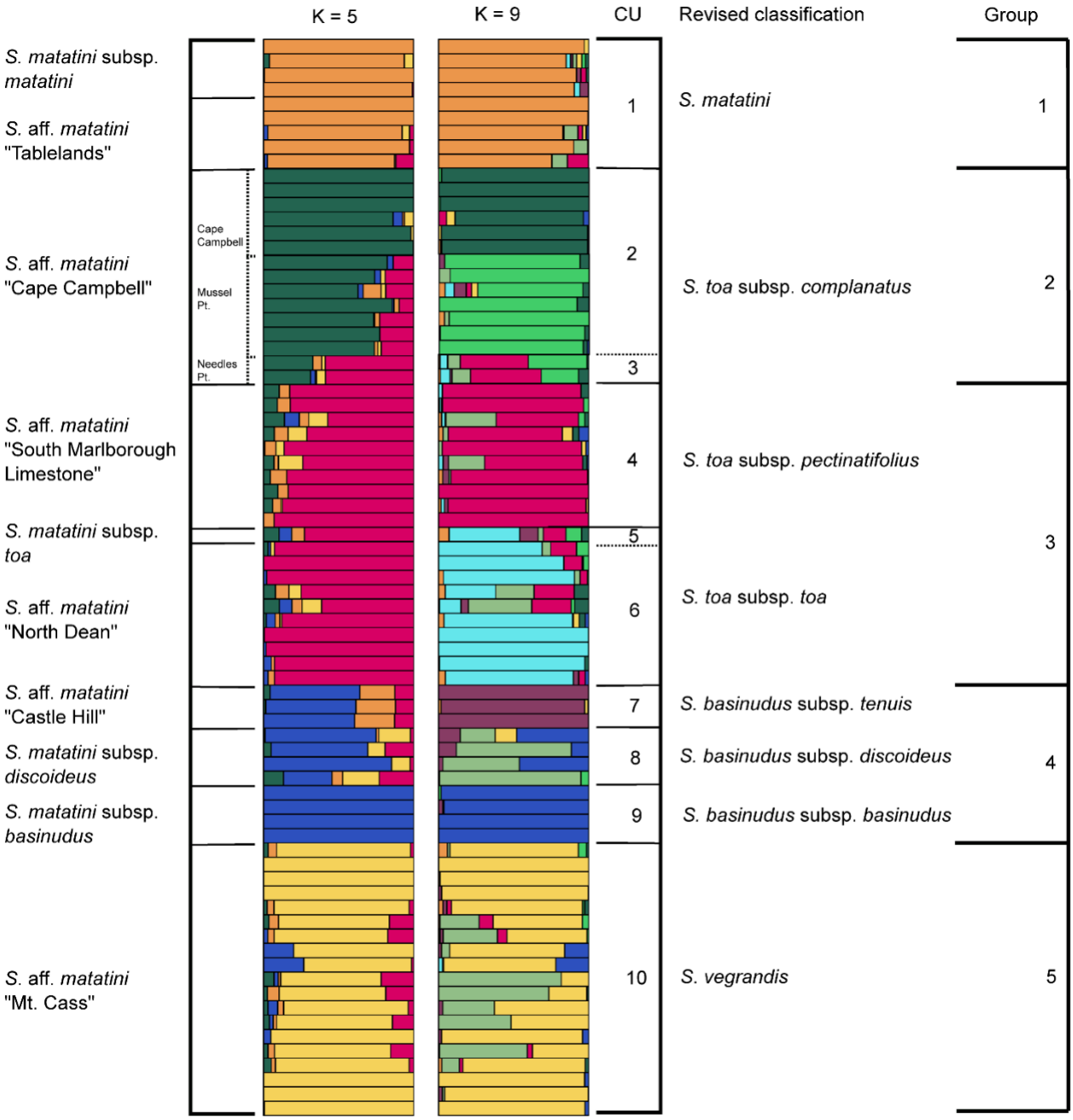

Figure 2. Snmf LEA plots for K = 5 and K=9. Each coloured horizontal bar represents a single sample. Its colour pattern shows its membership proportion to each of the five (for K = 5) or nine (K = 9) genetic groups that can be recognised using the genetic data set; each genetic group is represented by a different colour. Samples with a similar colour profile have a similar genetic profile. Samples without a predominant colour show evidence of admixture with different populations, for example as a result of gene flow. Group numbers correspond to the five genetic groups identified in our study. Conservation Units (CU) are also indicated (discussed below). Figure from Patel et al. (2026).

In contrast, the other two limestone forms are not or only weakly genetically differentiated from each other or the subspecies. *Senecio* aff. *matatini* "North Dean" and the single sample of *S. matatini* subsp. *toa* included in our analyses show little genetic differentiation among each other (Group 3). Likewise, populations of *S. matatini* subsp. *matatini* and *S.* aff. *matatini* "Tablelands" show close genetic similarities (Group 1). The results of this study therefore support the formal taxonomic recognition of some of the limestone forms, but not of others.

Changes to the classification of the *S. matatini* group

The patterns of genetic differentiation and admixture identified in this study, together with the morphological and ecological diversity documented for the S. matatini group (e.g., Heenan & Rogers

2019), support a classification that recognises four species (Table 1). To capture finer-scale genetic and morphological variation, subspecies are distinguished within two of these species (Table 1). This revised classification was formally published in Patel et al. 2026. It restricts S. matatini to populations from Tasman, while incorporating S. aff. matatini "Tablelands" within this species. In addition, we elevated subsp. toa to species level and established three subspecies for it to reflect the patterns of genetic differentiation among the populations of subsp. toa, S. aff. matatini "Cape Campbell", S. aff. matatini "North Dean" and S. aff. matatini "South Marlborough Limestone" included in our study, i.e. those in Group 2 and 3 (Table 1; Patel et al. 2026). Our data suggest that S. aff. matatini "North Dean" might not be taxonomically distinct from S. matatini subsp. toa, but we were unable to include samples from or near the type locality of this taxon (i.e. east of Taupo in Te Ika-a-Māui/North Island) in our study. Relatively little is known about subsp. toa in the South Island, with plants from or near populations of S. aff. matatini "North Dean" also occasionally collected under that name. If future studies indicate that S. matatini subsp. toa sensu stricto is genetically distinct from S. aff. matatini "North Dean" then a new taxon might need to be erected to accommodate its populations. Other taxonomic changes resulting from our study included recognising Group 4 at the species level as S. basinudus (Table 1; Patel et al. 2026). This allows us to retain subsp. basinudus, subsp. discoideus and S. aff. matatini "Castle Hill" as distinct taxa by recognising them at the level of subspecies, reflecting their close genetic similarity as well as their morphological and ecological distinctiveness. Although S. aff. matatini "Mt. Cass" showed the closest genetic affinities with this group, given that it consistently formed a separate genetic group, our results suggest that it constitutes an undescribed species, which we named S. vegrandis (Table 1; Patel et al. 2026).

Table 1. A new taxonomic classification for the *S. matatini* group. New names published by Patel et al. (2026) are aligned with the previously recognised scientific and informal names in this group, as well as the Conservation Units (CU) recommended in this study (discussed below).

Group	New scientific names	Previous scientific and informal names	CU
1	*S. matatini*	*S. matatini* subsp. *matatini* *S.* aff. *matatini* "Tablelands"	1
2	*S. toa* subsp. *complanatus*	*S.* aff. *matatini* "Cape Campbell" (Cape Campbell, Mussel Point populations)	2
		S. aff. *matatini* "Cape Campbell" (Needles Point population)	3
3	*S. toa* subsp. *pectinatifolius*	*S.* aff. *matatini* "South Marlborough Limestone"	4
	S. toa subsp. *toa*	*S. matatini* subsp. *toa*	5
		S. aff. *matatini* "North Dean"	6
4	*S. basinudus* subsp. *tenuis*	*S.* aff. *matatini* "Castle Hill"	7
	S. basinudus subsp. *discoideus*	*S. matatini* subsp. *discoideus*	8
	S. basinudus subsp. *basinudus*	*S. matatini* subsp. *basinudus*	9
5	*S. vegrandis*	S. aff. *matatini* "Mt Cass"	10

Conservation considerations

The *S. matatini* group consists of populations and groups of populations with large ecological differences. For example, subsp. *discoideus* grows in high-elevation scree environments, subsp. *basinudus* is found in coastal areas experiencing salt spray, and *S.* aff. *matatini* "Castle Hill" only grows on limestone. This means that different forms within the *S. matatini* group have different ecological

Top: *Senecio basinudus* subsp. *tenuis.*
Middle: (left) *Senecio toa* subsp. *complanatus*; (right) *S. toa* sibsp. *pectinatifolius*.
Bottom: *Senecio vergrandis*.

needs and experience different threats. They may therefore require tailored conservation management approaches. Our revised classification of the *S. matatini* group (Patel et al. 2026) provides a better starting point for guiding this. Because it formally recognises a larger number of species and subspecies, it more accurately represents variation in genetic and evolutionary distinctiveness across the group, thereby providing a stronger basis for conservation prioritisation.

To further facilitate conservation management, we also used our data to designate 10 Conservation Units (CUs; Table 1; Funk et al. 2012). These are populations or groups of populations that may need to be considered separately when conservation management plans are developed. These CUs are closely aligned with the species and subspecies of our new classification, except for *S. toa* subsp. *complanatus* and *S. toa* subsp. *toa*. The Needles Point population of the former is genetically different from the other populations of this subspecies and therefore represents a distinct CU that needs to be managed separately (Table 1). We also recommend considering populations previously identified as *S. matatini* subsp. *toa* and *S.* aff. *matatini* "North Dean" separately within *S. toa* subsp. *toa* until it is clearer whether South Island populations identified as subsp. *toa* belong to the same taxon as those from the type locality of subsp. *toa* in the North Island.

Acknowledgements

The research presented here is based on Samiksha Patel's MSc thesis at University of Canterbury under the supervision of Pieter Pelser and Peter Heenan. We would like to thank the New Zealand Plant Conservation Network for awarding Samiksha the David Given Threatened Plant Scholarship and for supporting her research by helping her organise and collect plant samples. We would especially like to thank Jan Clayton-Greene, Shannel Courtney, Alex Fergus, Hermann Frank, Miles Giller, Greg Napp, and Laura Parks. Various landowners provided access to their properties, and we would like to acknowledge their hospitality and cooperation. Ines Schönberger and Rob Smissen (Bioeconomy Science Institute) respectively provided support for work at the Alan Herbarium and advice about optimising DNA extractions. Samiksha Patel also received funding for this research from the Hellaby Grasslands Trust, Wellington Botanical Society (Jubilee Award), and Australasian Systematic Botany Society (Hansjörg Eichler Scientific Research Grant).

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2026 NZPCN Conference Charity Auctions – Items wanted

12–15 October Te Whanganui-a-Tara | Wellington

Matt Ward, NZPCN Council Member – mattdavidward@gmail.com

Kia ora folks, there is a fantastic conference is in the making in our wonderful Capital, the theme *Māhia ngā here - Collaboration for better conservation.* The conference will coincide with Ōtari Native Botanical Garden & Wilton's Bush Reserve 100-year Anniversary. It's shaping up nicely, relying on you all to attend to make it memorable. I have been tasked with running the charity auction to continue to raise funds for our two Trusts, the 'David Given Scholarship' and the 'John Sawyer Plant Conservation Fund'. Any funds made from the auctions will be split between the two Trusts.

I'm hoping there will be two auctions this conference, as long as we get a selection of items to auction that is, which is where you can contribute… A silent auction run during the presentation programme and a second brief live auction during the conference dinner which will include a selection of up to 10 items depending on how things land. You will all be at the awesome dinner evening as it's part of the entry fee, excellent, lots of potential.

I'm sure you are aware, making these auctions happen is only possible with your help, in the form of item donations, or suggestions for me to follow up on. We are happy to receive anything donated, particularly if it themes toward our core, Aotearoa Flora. In the past we have had creations of all types from woven items to oil paintings, hand-crafted celebration cards to second-hand books of interesting provenance, live plants, pressed plants, printed plants, carvings, cups, drink bottles, vouchers, experiences, garments, perfumes and jewellery. You name it, we will auction it, its all for a good cause, our native plants.

So far, we have had some awesome items generously donated, and a few promises…

ART: From Jane Gosden—3 beautiful original acrylic on canvas paintings.

Melanie Newfield has promised a drawing or two.

Matt Ward will donate a couple of pieces of art too.

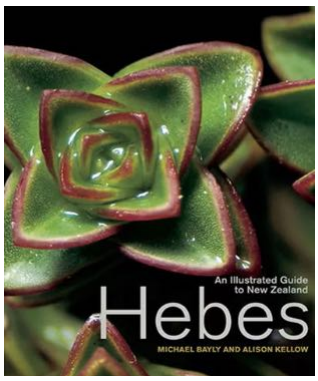
Joseph Knight is going to donate a couple of his photographs framed.

Left to right: *Thelymitra carnea* – pink sun orchid by Jane Gosden 2025; *Pittosporum* 'Michiei' *pimelioides* subsp. *majus* – de Serville cliff's pittosporum. (not for auction, family taonga) by Matt Ward 2026; *Celmisia macmahonii* var. *macmahonii* – Mt Stokes daisy (not for auction) by Melanie Newfield 2025

BOOKS: Te Papa Press (thanks to Heidi Meidt), a boxset of 6 gorgeous nature books, also a copy of Bayly & Kellow's – An illustrated guide to New Zealand Hebes.

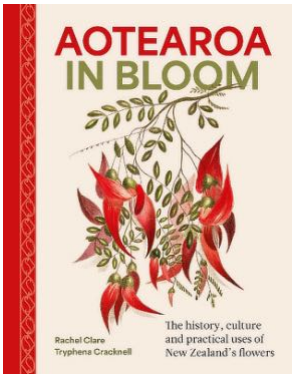
Roger Steele of Steele Roberts Aotearoa has kindly donated two copies of a special book about some of the plants of Rēkohu – Chatham Islands.

We recently received a copy of "Aotearoa in bloom" to review, this copy has also been donated for auction.

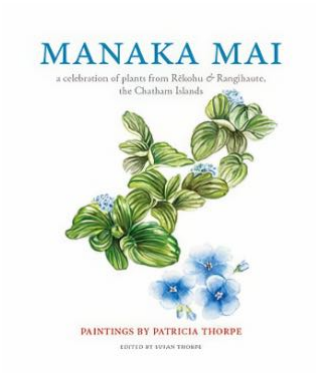


This out-of-print book is the most comprehensive guide to the identification, classification, and biology of hebes. These flowering plants are remarkably diverse and inhabit wild areas from the coast to the mountains.

Designed by the award-winning Tim Denee, these charming hardbacks can be used in the backyard or out in nature. Together, and fully illustrated, they cover more than 400 species of plants, fish, shells, insects, spiders and birds.



Aotearoa in bloom – The history, culture and practical uses of New Zealand's flowers. By Rachel Clare & Tryphena Cracknell.



Manaka Mai – A celebration of plants from Rekohu & Rangihaute, the Chatham Islands. Edited by Susan Thorpe.

MERCH: The National Wilding Conifer Control Programme (thanks to Leigh Strange) has promised us some cool merch.

HANDCRAFTED: Catherine Beard has promised a couple of handmade wooden utility items, which will include a story of where the recycled or discarded timber used has come from, simply awesome!

Handcrafted spoons like what Catherine Beard has promised for auction.

Cara-Lisa's Schloots' mum has again stepped up to donate an item of delicate harakeke weaving, very beautiful work as anyone at the last conference will recall.

Louise Webster of Cycled Ceramics, Christchurch has donated a completely unique creation titled "*Ode to Trilepidea adamsii*", a ceramic work honouring one of Aotearoa New Zealand's extinct native plants. It uses fragile vessels, hand-formed leaves and classification labels to trace the plant's movement from At Risk, to Threatened, to Extinct. The work reflects Louise's broader practice of using ceramics to tell stories about environmental loss, human impact and the urgent need to care for our fragile ecosystems. Its inclusion in the NZPCN charity auction feels especially fitting, as proceeds support plant conservation through the David Given Scholarship and the John Sawyer Plant Conservation Fund. In case you might be thinking that sounds familiar, it's our NZPCN logo and the newsletter you are reading is also an ode.

A set of ceramic creations by Louise Webster the founder of Cycled Ceramics, Christchurch.

If you would like to donate an item or two towards this year's, auctions please contact me (email up top) and I can give you a Wellington address to send to, or we can discuss it coming with you to the conference, whatever works for you. We will happily accept anything that may be useful, decorative, dreamy, warm, smelly, you name it!! We are now only a few months away, so the sooner you donate, the more I can thank you in this column!

New regional threat assessment published for Northland's vascular plants

Marley Ford (mfecobotany@gmail.com) and Lisa Forester (lisaf@nrc.govt.nz)

A landmark new report, Conservation Status of Indigenous Vascular Plants in Taitokerau/Northland 2026 (Ford, Cameron, Champion, de Lange, Townsend & Forester), provides the first published regional conservation assessment for the region, commissioned by Northland Regional Council. The assessment was carried out by an expert panel over three days in July 2025, applying a regionally adapted version of the New Zealand Threat Classification System (following the methodology of Crisp et al. 2025).

Having a regional listing allows landowners, hapū and agencies to make better decisions about protecting the places where rare plants in Taitokerau grow. A regional listing also helps to inform the national threat listing which is updated every five years. The report will identify plants that are rare in Taitokerau and help prevent them from being lost from the region through legal and planning processes and becoming more threatened nationally.

Of the 878 indigenous vascular plant taxa assessed as present in Northland:

- 128 taxa (14.6%) were ranked Regionally Threatened (77 Critical, 29 Endangered, 22 Vulnerable)
- 292 taxa (33.3%) were ranked Regionally At Risk (60 Declining, 5 Relict, 218 Naturally Uncommon, 1 Vagrant, 8 Coloniser)
- 341 taxa were Regionally Not Threatened
- 83 taxa (9.5%) were Regionally Data Deficient
- 34 taxa were assessed as Regionally Extirpated, including one taxon (Trilepidea adamsii) now nationally extinct
- Five additional taxa not currently in the national NZTCS list were recognised as legitimate by the panel

Notably, Northland was identified as a National Stronghold (>20% of the national population) for 175 threatened or at-risk taxa, including 69 regional endemics found nowhere else in the world, concentrated particularly around Te Paki/North Cape, especially the Surville Cliffs, Three Kings Islands, Poor Knights Islands, and the Wāimā Range. This places it among the country's top centres of endemism, alongside Southland (72), Nelson–Tasman (68), and Otago (39). Northland's high diversity of localised species is linked to its unusually stable geological history: it retained continuous forest cover through the Last Glacial Maximum, allowing older floristic elements to persist, much as in other long-stable regions such as northwest Nelson and Otago. Around 178 taxa have type localities within the region (~20% of the assessed flora).

The report also delivers an updated regional wetland indicator status for native plants, building on Manaaki Whenua's 2021 national list. Wetland-associated taxa are disproportionately represented among threatened categories, with 38% of Regionally Critical and 45% of Regionally Vulnerable taxa being wetland-associated. Wetland indicator status ratings matter because the presence of these plants helps determine whether an area is a wetland and where its boundaries lie, supporting the implementation of freshwater policies and regulations.

This is the fourth regional plant threat assessment completed in Aotearoa, following those completed for Wellington, Auckland, and Otago, and is intended to strengthen both local RMA decision-making (informing Section 6c assessments and significant natural area identification) and future national NZTCS reassessments.

We would like to thank the whole team of botanists and experts who sat on the panel and undertook the ranking, mostly voluntarily: Professor Peter de Lange (Unitec), one of New Zealand's leading plant experts, Paul Champion, Freshwater Scientist, Biodiversity and Biosecurity (retired from NIWA); Ewen Cameron, retired Curator of Botany at Auckland Museum; and Andrew Townsend, Senior Technical Advisor in Ecology (DOC). All panel members have in-depth knowledge of Northland's flora. Drs Bev and Bruce Clarkson, national wetland experts, also helped with an additional part of the project: assigning each taxon a wetland indicator rating. Regional conservation status ranking relies on plant records and collections held in herbaria, so a big shout-out to the professional and amateur botanists, both past and present, who carried out the fieldwork and gathered the records used for the threat status rankings.

You can now find the Northland Regional conservation statuses on NZPCN species factsheets.

The full report, including detailed taxon tables, qualifiers, and appendices, is available via Northland Regional Council: https://www.nrc.govt.nz/resource-library-summary/research-and-reports/biodiversity/conservation-status-of-indigenous-vascular-plants-in-northland-2026/

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From the Field – Hydrophytes and macrophytes

Matt Ward, NZPCN Council Member (mattdavidward@gmail.com)

In the field, can also mean in a stream, river or lake for someone who works with plants. This year for an unusual change I have been getting my feet wet to fulfil the contracts I have been asked to complete, which has been pretty cool(ing). Two tasks I have been lucky enough to be involved with have included surveying in the Wairarapa Moana Wetlands area near Featherston, and the Waimeha Stream, Waikanae Beach. Both areas involve fresh, or sort of fresh water and have very interesting floral components in and around them.

Lake Wairarapa turf exposed, giving it a chance to flower and proliferate. March 2026.

Freshwater aquatic plants are referred to as either macrophytes and/or hydrophytes, they are adapted to living in, on, or under water.

- A **hydrophyte** is any plant adapted to live in water or waterlogged, oxygen-deficient soil. These "aquatic plants" either float on the surface, grow completely submerged, or root in shallow water along riverbanks. This includes microscopic plants like phytoplankton and microalgae
- A **macrophyte** is any aquatic plant that is large enough to be seen with the naked eye. This term includes rooted and floating vascular plants, ferns, mosses, and macroscopic algae (like certain charophytes) that live in or near fresh, brackish, or salt water.

Rather than belonging to a single genus, these plants form an ecological group. They are obligate and/or facultative wetland species and represent not just higher plants but include non-vascular plants too.

Near Lake Wairarapa I was lucky to meet some species that I had previously only ever heard of whilst reading and looking through the excellent 'Wetland Plants in New Zealand – By Johnson & Brooke' a

must have edition for anyone learning wetland species, both native and non-native. The plants noted were growing in either recently exposed gravels, silty bottom, or edge habitat. The species which piqued my interest are considered as both a macrophyte and hydrophyte and they included:

1. *Elatine gratioloides* (waterwort) – Not Threatened; Native, yet not often seen either, an obligate wetland species. Seen here as a resident of the exposed gravel community part of the Tauwhaerenikau River delta.

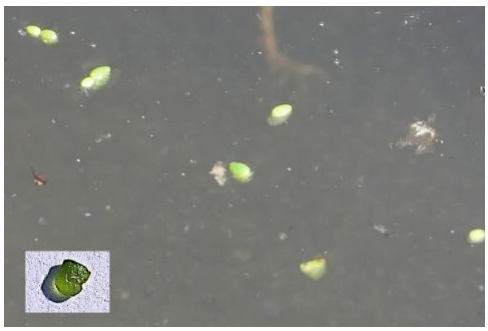
2. *Myriophyllum propinquum* (common water milfoil) – Not Threatened; Endemic, an obligate wetland species. Not completely new for me, yet I had not seen a male flower prior to this. Seen here as dweller of the exposed silty bottom of Lake Wairarapa.

3. *Myriophyllum votschii* – Not Threatened; Endemic, an obligate wetland species. A plant very similar to *Crassula sinclairii* in this location, the leaves being longer than those of the Crassula. Seen here as a resident of the exposed gravel community part of the Tauwhaerenikau River delta.

4. *Crassula sinclairii* (Sinclair's stonecrop) – Not Threatened; Endemic, an obligate wetland species. Seen here as a resident of the exposed gravelly bottom of Lake Wairarapa.

5. *Alternanthera nahui* (nahui) – Not Threatened; Native, an obligate wetland species. Seen here as a dweller of the Lake Wairarapa edge habitat.

6. *Wolffia australiana* (water-meal) – Not Threatened; Native, an obligate wetland species. Easy to miss due to its very modest size being 0.3–1 mm in length. Seen here on the water surface within the Wairarapa Moana wetland complex.



7. *Ranunculus limosella* (mud buttercup) – Not Threatened; Endemic, an obligate wetland species. Another not quite first, but first time I had seen the amazing flowers presented so nicely contrasted against the foliage. Seen here as the common name suggests in the muddy edge of Lake Wairarapa.

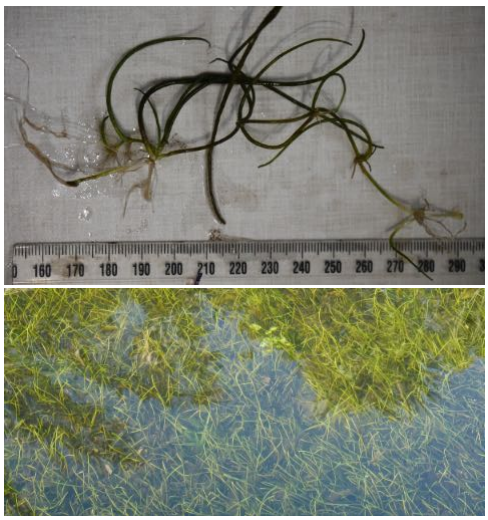
Then, a few months later while looking at an area of modified waterways in Waikanae a couple of other species were recorded that I had not met before. Most of the species from here and in the Wairarapa are not just water associates but also very small so it is easy to overlook them. Well, that's my excuse. Nonetheless I always find great joy in meeting new friends, and these Kapiti residents are no different. As with the Wairarapa species those featured below are considered both macrophyte and hydrophyte, with one also being a charophyte.

8. *Riccia fluitans* (floating chrystalwort) – Not Threatened; Native, non-vascular species found across large parts of the world, a floating liverwort. Seen here floating in the Waimeha and Ngarara Streams confluence.

9. *Lemna minuta* (least duckweed) – Introduced Species; This is a recently much discussed species which seems to have been first confirmed in New Zealand in 2016 but then gone under the radar since. It is relatively easy to distinguish from the more common *Lemna disperma*, by its smaller size and more prominent midvein. Seen here floating in the Waimeha and Ngarara Streams confluence.

10. *Nitella hookeri* (stonewort) – Native, non-vascular macro-algae charophyte, which does its best to look like a higher plant. This species grows in the silty base of freshwater lakes and streams. I found this by accident when I was trying to sample the next species of note, seen here in hand after being fished out of the Waimeha Stream.

11. *Lilaeopsis ruthiana* – Not Threatened; This endemic member of the carrot (Apiaceae) family, is quite possibly more common in the lower North Island, than we know. Possibly rarely seen down here as it seems to enjoy the submerged habitat it was seen in here, growing on the base of a deep stream bed. This is only the second time it has been reported in the Greater Wellington Region making it potentially 'Regionally Critical'. A bit more searching of potentially suitable waterways nearby will either prove or disprove this. Seen here as it looks on the stream bed and a sample fished out to identify…



Meeting these new species involved spending a bit more time 'looking', something I would highly recommend to anyone exploring the area they are in at the time. Some of the featured species were not easy to identify with certainty immediately, it took time and help from some of the other smarter plant botherers I am lucky enough to have contact with. Thank you Jane Gosden, Joe Dillon, Joseph Knight, Roman Romanov and David Lyttle.

A new population of highly-invasive fireweed in southern Wairarapa, and a taxonomic complication

Marley Ford (mfecobotany@gmail.com) and Lara Shepherd (Lara.Shepherd@tepapa.govt.nz)

In June 2022, the late Pat Enright pointed out a scattered population of *Senecio* growing on roadside gravel and up into the gravel fans of Cape Palliser, southern Wairarapa, noting that they appeared different from other *Senecio* in the area, though their identity remained unclear at the time (Fig. 1, 2). Examination of the morphology of this population, supported by genetic data (see below), has since confirmed this population as part of the fireweed complex, currently referred to as *Senecio madagascariensis* Poir., though as outlined below that name is now in question at the global level. The find represents a substantial distribution extension: the species had previously been documented in New Zealand only from Northland, several hundred kilometres to the north, so this Wairarapa population extends its known New Zealand range considerably further south.

Figure 1. Habitat of *Senecio madagascariensis*, Cape Palliser Road, South Wairarapa. 24 January 2026. Photo: M. Ford.

Figure 2. Foliage of *Senecio madagascariensis*, Cape Palliser Road, South Wairarapa. 24 January 2026. Photo: M. Ford.

Untangling the fireweed complex

New Zealand's *Senecio* populations in the fireweed complex were long assigned wholesale to *Senecio skirrhodon* DC. That changed with Schmidt-Lebuhn et al (2024), who used target capture sequencing of hundreds of nuclear genes to show that two distinct species are present in New Zealand: *S. skirrhodon*, widespread and largely non-invasive, and *S. madagascariensis*, documented as invasive in Northland pasture. Two of the *S. skirrhodon* samples in that study came from further south in the North Island, from habitats including roadside gravel, matching the setting of this population; the two species were also found to differ consistently in calyculus bract size, with *S. skirrhodon* bracts running larger and wider than those of *S. madagascariensis* (Table 1, Fig. 3, 4).

Figure 3 (left). Calycular bracts of *Senecio madagascariensis*, showing narrower bracts. Photographed from a plant observed at Omanaia, Northland. 28 June 2025. Photo: M. Ford.

Figure 4. Calycular bracts of *Senecio skirrhodon*, showing wider bracts. Photographed from a plant observed at Whangārei, Northland. 4 July 2026. M. Ford.

Senecio madagascariensis, as currently circumscribed, is a Weed of National Significance in Australia, where it has caused major pastoral losses; it produces pyrrolizidine alkaloids toxic to livestock, particularly cattle and horses, reduces pasture palatability, and its wind-dispersed seed lets it colonise disturbed, open ground rapidly (Wijayabandara et al 2022). *Senecio skirrhodon* does not show the same invasive behaviour in New Zealand (Schmidt-Lebuhn et al 2024). It is by far the longer-established of the two: *S. skirrhodon* was first recorded as naturalised in New Zealand in 1920 and is found throughout New Zealand (Webb, Sykes and Garnock-Jones (1988); Fig. 5). The invasive lineage now known as *S. madagascariensis*, by contrast, was only genetically confirmed as present in the country in 2024, more than a century later (Schmidt-Lebuhn et al 2024). *Senecio madagascariensis* is currently restricted to Northland and the Wairarapa but may be more widely distributed than records indicate, with populations potentially overlooked elsewhere (Fig. 5). In western Northland, the lead author has observed the species actively spreading south since 2020 from Hokianga to south of Dargaville.

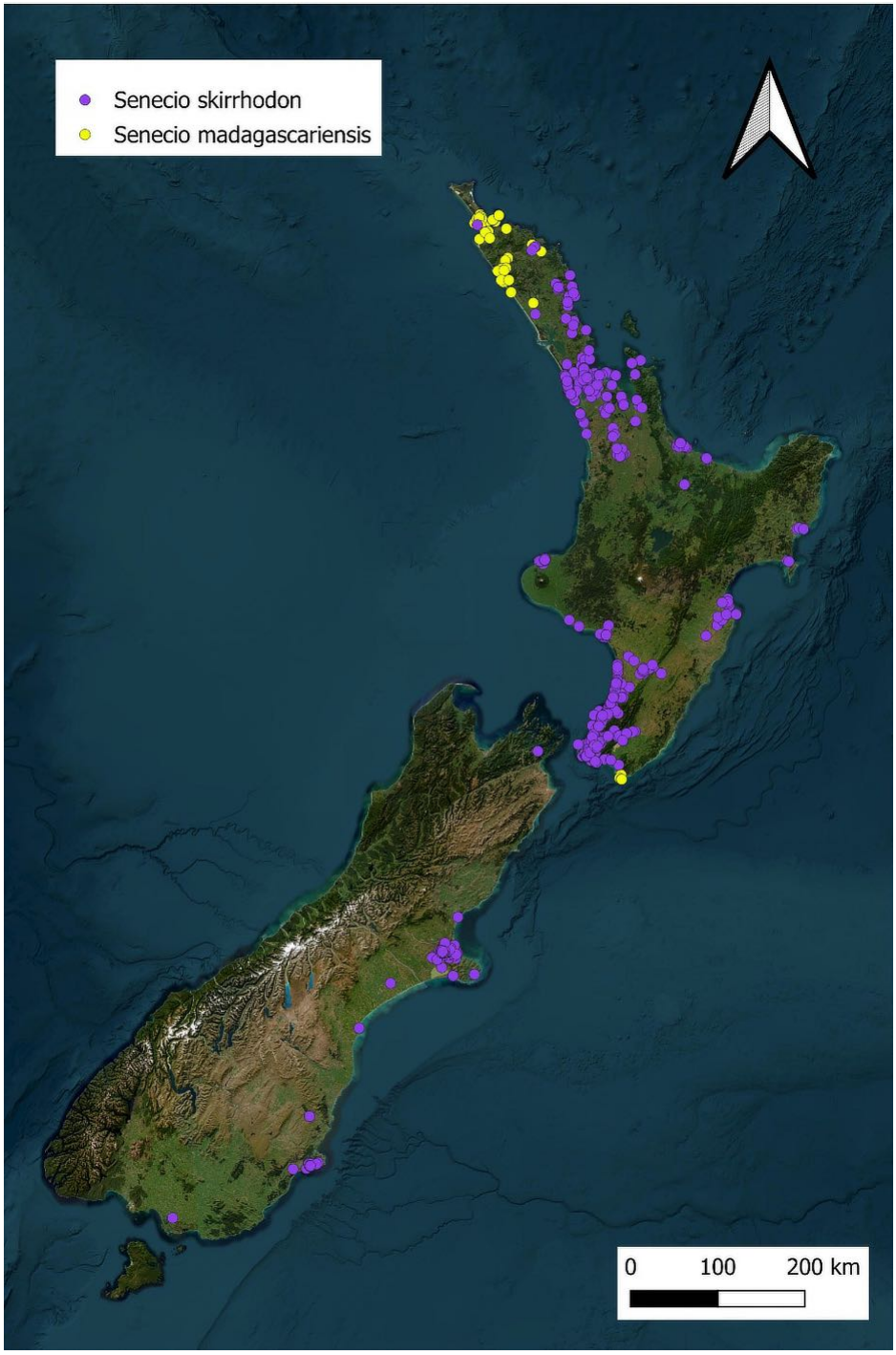


Figure 5. Distribution of *Senecio skirrhodon* (purple) and *Senecio madagascariensis* (yellow) in New Zealand, based on iNaturalist occurrence records. Note that some identifications may be inaccurate.

Natural biocontrol

The rust *Puccinia lagenophorae* and the moth larvae *Nyctemera* have both been recorded on *S. madagascariensis* in Northland: rust infection was associated with significantly fewer stems per plant, while the larvae caused only minor foliage damage (Dymock and Winks 2025). Both have also been observed by the lead author at the southern end of the Northland range of Madagascan ragwort.

A complication: the name itself is under revision

A follow-up global study to Schmidt-Lebuhn et al (2024) has substantially complicated the picture (Schmidt-Lebuhn et al 2025). By expanding sampling of *S. madagascariensis* across its full range, including from the type location of Madagascar for the first time in a phylogenomic analysis, the authors found that true Madagascan *S. madagascariensis* forms a deeply divergent lineage, clearly separate from every continental African and invasive population currently carrying that name, New Zealand's included.

Because the type specimen of *S. madagascariensis* is Madagascan, the continental African and invasive lineage would need a different name if formally recognised as a separate species. The authors identify *Senecio ruderalis* Harv. as the oldest available synonym applying to continental African material, based on type specimens from Durban and Natal, and therefore the name with taxonomic priority for the invasive lineage. They stop short of making the change formally, pending consultation with South African plant taxonomists, and refer to the invasive lineage throughout as "putative *S. ruderalis*."

New Zealand's invasive populations belong to Clade V, along with most Australian, Hawaiian, and Japanese material. This is a separate lineage from the invasive populations in South America (Clade VI). The source of Clade V within its natural distribution in southern Africa is unclear: only one South African sample, from Eastern Cape, fell into this clade, while nearly all other southern African material sampled belonged to Clade VI. The authors think this is most likely because Eastern Cape has not been sampled thoroughly enough, though they cannot yet rule out a hybrid origin for Clade V. This has practical consequences for biocontrol: past research assumed KwaZulu-Natal was the source region for invasive fireweed, but KwaZulu-Natal material mostly matches Clade VI (South America), not Clade V (Australia, New Zealand, Hawaii, and Japan). That assumption may need revisiting.

The Cape Palliser Road record

The southern North Island population of fireweed grows along Cape Palliser Road, South Wairarapa, (Fig. 5), scattered along roadside gravel and up into the gravel fans above the road (Fig. 1, 2). The species favours disturbed, open, well-drained substrate along this roadside corridor, exactly the kind of low-competition, high-disturbance ground that suits an opportunistic coloniser with small, wind-dispersed seed. No observations of *Senecio skirrhodon* were noted near to this population based on iNaturalist observations.

Given the close relationships of *Senecio* species in this complex, and the lack of fixed genetic differences between them, genetic confirmation of the identity of the Wairarapa population would ideally involve the generation of the same target capture nuclear sequences used by Schmidt-Lebuhn et al (2025) and comparison to their dataset. However, as this would be extremely costly and we had no specific funding for this work, we sequenced three nuclear markers: the internal transcribed spacer region (ITS) and two loci from Schmidt-Lebuhn et al (2025) that had alleles that were near fixation in Clade V. The sequences from all three loci were shared with specimens from Clade V rather than *S. skirrhodon*, strongly supporting the morphological identification of this population.

Re-identification of existing iNaturalist observations identified the species localised around Cape Palliser, with one potentially inaccurately-located specimen recorded further inland (Fig. 5, https://www.inaturalist.nz/observations/215679198).

Pat Enright's original field observation in 2022 predates all the genetic work discussed here, illustrating the continued importance of experienced field botanists in the early detection of naturalising weeds. A voucher specimen was collected by M. Ford on 24 January 2026 and lodged at the Allan Herbarium (CHR 704426, MF3731; https://www.inaturalist.nz/observations/368845777), with the identification supported by genetic data on 6 June 2026. More surveys are needed, and populations of nearby *Senecio* should be checked.

Field identification: fireweed vs *S. skirrhodon*

The two species can be told apart in the field, though some characters hold up better than others. The width of the calycular bract, shown in Figures 3 and 4, is the primary diagnostic character and is reliable regardless of plant condition. Other distinguishing traits include the more velvety, fleshier leaves of *S. skirrhodon* and its more flaccid, branched habit, compared with the upright, less branched habit of *S. madagascariensis*. Additional characters separating the two species are given in Table 1.

Table 1. Comparison of *Senecio madagascariensis* (NZ invasive) and *S. skirrhodon*. Diagnostic characters modified from after Schmidt-Lebuhn et al (2024).

Character	*S. madagascariensis* (NZ invasive)	*S. skirrhodon*
Life form	Annual or short-lived perennial	Perennial
Habit	Erect to multi-branched	More divided and spreading
Root system	Small fibrous root	More developed perennial rootstock
Habitat	Pasture in sand country, roadsides, quarries, forestry	Weedy habitats, urban, dunes, roadsides
Calycular bract width (primary diagnostic)	Narrow, 0.5-0.8 mm	Wide, 0.8-1.5 mm
Leaf shape and texture (less reliable after mowing)	Narrow lanceolate, not fleshy; leaf L:W ratio 5-12	Broader, often fleshy; leaf L:W ratio 3-9

What this means going forward

Genetic tools now allow *S. skirrhodon* to be separated from the *S. madagascariensis*/putative *S. ruderalis* lineages with greater accuracy, particularly when paired with morphology, and this record adds a data point to an expanding distribution. The Cape Palliser population extends the confirmed range of the invasive lineage well south of Northland, and the possibility that populations elsewhere have been overlooked or misidentified as *S. skirrhodon* has direct implications for biosecurity monitoring and, potentially, for biocontrol planning: agents developed against one lineage may not perform the same way against the other, so knowing which is present, and where, matters before any biocontrol response is considered.

Anyone encountering a similar-looking *Senecio* on disturbed ground, particularly in modified environments like gravelly, roadside, should treat it as worth a closer look and, where possible take good photos of its distinguishing features and upload it to iNaturalist.

Acknowledgments

The lead author would like to thank the late Pat Enright (1950–2025) and his extant field companions Philip Smith, Logan Drummond and David Straight. We also thank Joanna Barr (Northland Regional Council) for discussions, Elizabeth Miller from National Forestry Herbarium for sharing data and Ines Schönberger and Rob Smissen from the Allan Herbarium for handling material.

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Nominations Open for the 2026 NZPCN Plant Conservation Awards

Jo Smith (joannak.smith@outlook.com)

The NZPCN Plant Conservation Awards recognise the people, organisations and communities whose dedication is helping to protect, restore and better understand Aotearoa's unique flora.

Across the country, countless individuals contribute to plant conservation in different ways. Some advance scientific knowledge through research and education, while others restore habitats, grow native plants, lead community initiatives, inspire young people or quietly dedicate countless hours behind the scenes. Together, their efforts strengthen plant conservation and help ensure our indigenous flora continues to thrive.

The awards provide an opportunity to acknowledge these contributions and celebrate the diversity of people working to make a difference. Nominations are open across a range of categories, including individuals, community groups, schools, councils, plant nurseries and young plant conservationists.

If someone or some group comes to mind, we encourage you to nominate them. The nomination process is straightforward, takes only a few minutes to complete and anyone can submit a nomination, membership of NZPCN is not required.

Award recipients will be announced at the 2026 NZPCN Conference in Te Whanganui-a-Tara/ Wellington.

To submit a nomination, please complete the nomination form and send it to Awards Co-ordinator Jo Smith at joannak.smith@outlook.com with the subject line: NZPCN Award Nomination.

Nominations close on 31 August 2026 and more information can be found here: https://www.nzpcn.org.nz/nzpcn/awards/nzpcn-awards/

The NZPCN Favourite Plant vote is back for 2026!

Joseph Knight, NZPCN 2026 Favourite Plant Vote Co-ordinator (josephknightnz@gmail.com)

This year, voters will be able to choose from a selection of threatened wetland-specialist plants. The selection includes some of New Zealand's most threatened and unique native species from one of our most endangered ecosystems. Wetlands are home to a wide variety of specialised plants, many of which are found nowhere else in the world. Unfortunately, the extensive loss and modification of wetlands over the past two centuries has left many of these species vulnerable. Some of these are now restricted to only a handful of sites as their habitat continues to decline.

The 2026 list of candidates includes a diverse range of wetland plants, from tiny ephemeral herbs and obscure rushes and sedges to vibrant orchids and tall trees. The vote provides a great opportunity to bring attention to New Zealand's unique wetland flora as well as raising awareness for these threatened species and the importance of protecting and restoring our wetland habitats.

Voting will open during the NZPCN 2026 conference in Wellington in October and will run for one month.

A list of candidate species will be announced in a forthcoming NZPCN newsletter ahead of voting, so keep an eye on future *Trilepidea* articles so you don't miss out.

We look forward to seeing which species takes the title of New Zealand's Favourite Plant in 2026!

Potamogeton cheesemanii. Photo: Jeremy Rolfe.

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.

NZPCN 2026 Conference

The NZPCN 2026 Conference will be held in Te Whanganui-a-Tara/Wellington, 12–15 October 2026. Mark these dates in your diary now for an exciting few days of botanical knowledge sharing, networking and local exploration. More information will be included in future issues of *Trilepidea*, as details are finalised.

15th Australasian Plant Conservation Conference (APCC15), Port Douglas – QLD, 24-28 August 2026

Theme: 'Plant Conservation: Culture, Collaboration and Change'

APCC15 will explore these three spheres of native plant recovery through rainforest restoration partnerships, collaborations with Traditional Owner groups, impacts of climate change induced natural disasters, management of threatened species and communities, and biosecurity threats such as Myrtle Rust. The conference will bring together from across the continent, people researching, working, or volunteering in plant conservation to address the challenges facing Australasia's spectacular and diverse plant life, through information exchange and sharing best practice approaches. There will also be numerous workshops, social events and field trip options, which you can find more info on at the conference website. Don't miss out to be a part of the first edition of APCC to be held in the Wet Tropics, right on the doorstep of the Daintree.

https://www.anpc.asn.au/conferences-apcc15/

38th John Child Bryophyte and Lichen Workshop – Rotorua

Thursday 12 November – Tuesday 17 November, 2026

Organiser: Anne Redpath, annepathred@gmail.com

Where: Wai-o-tapu Camp, Old Waiotapu Rd, Kaingaroa Forest. The Wai-o-tapu camp has a interesting history. Check out their website, www.waiotapucamp.org.nz. The camp is close to Kerosene Creek, a free shallow warm water creek popular with tourists.

When: From Thursday 12 November afternoon (dinner included) to Tuesday 17 morning (breakfast included). The timing of this workshop is an attempt to co-ordinate with the conclusion of University exams.

Who: The workshop is open to anyone interested in bryophytes and lichens from novices, amateurs to professional botanists. The aim is to gain and share knowledge of, and to encourage an interest in the mosses, liverworts, hornworts and lichens of New Zealand. Regular attendees are friendly and willing to help beginners. Microscopes will be available to share.

Accommodation: The accommodation is a series of independent huts with separate toilet and shower blocks. Each hut sleeps 2–6 in beds or bunks. You will need to bring a sleeping bag and pillow. Some bedding will be available. The hall, dining room and kitchen facilities will be more than adequate for our group. Internet & cell phone available. More details about the accommodation will be sent in later newsletters to those who will be attending. Other accommodation is available in Rotorua.

Meals: We will make our breakfasts and lunches from food provided. Dinner provided. An attempt will be made to cater for dietary requirements, but those with specific diets may wish to bring their own food.

Daily Field Trips: Will be in groups to various reserves in the region, shared vehicle transport will be used. You will need to bring suitable clothing and footwear for all the different weather types NZ can produce.

Getting there: Rotorua is a major tourist town with plenty of flight and bus options. Pick ups and transport to the camp will be arranged later.

Costs: We attempt to keep these as low as possible. Accommodation costs will be around $25 per person per night. Food costs will be determined at the end of the workshop and passengers will contribute to shared vehicle costs. A deposit will be asked for closer to the time.

Tom Moss Award: Students who give a 15-minute talk at the workshop are eligible for this award. The best speaker receives a monetary award.

Mailing List: Hopefully this mailing list is going to the right people. Please pass this circular on to whoever you think might be interested.

Auckland Botanical Society	
Meeting: Wednesday 5 August at 7.30pm. **Speaker:** Campbell James. **Topic:** Botany of Borneo.	**Venue:** Unitec, School of Natural Sciences, 139 Carrington Road, Mount Albert, Auckland. Gate 4, Building 115, Room 2005, Level 2.
Field Trip: Saturday 15 August to Auckland Museum herbarium and Auckland Domain.	**Leaders:** Yumiko Baba and Dan Blanchon.
Rotorua Botanical Society	
Field Trip: Sunday 2 August to Rotoehu Forest – Eastern blocks. **Meet:** Rotorua carpark at 8.00am. **Grade:** Medium.	**Leader:** Chris Bycroft, email chris.bycroft@wildlands.co.nz, ph. 021 394 096.
Wellington Botanical Society	
Field Trip: Saturday 1 August to Porirua Park Bush (Gillies Place), Ranui, Porirua.	**Leader:** Andrew Jinks
Meeting: Monday 17 August at 7.30pm. **Speaker:** Emeritus Professor Dave Kelly, University of Canterbury. **Topic:** *Aciphylla*.	**Venue:** Victoria University, Wellington, Lecture Theatre M101, ground floor Murphy Building, west side of Kelburn Parade.
Nelson Botanical Society	
Field Trips/Meetings: Please refer to the website: https://www.nelsonbotanicalsociety.org/trips-meetings.	
Canterbury Botanical Society	
Field Trips/Meetings: Please refer to the website: https://canterburybotanicalsociety.org.nz/canterbury-botanical-meetings-field-trips for current details.	
Botanical Society of Otago	
Meeting: Wednesday 12 August at 5.20pm. **Speaker:** Phil Garnock-Jones. **Topic:** Natural history of New Zealand flowers.	**Contact:** Lydia Turley, email lydiamturley@gmail.com, ph. 021 062 3602.
Field Trip: Sunday 23 August at 1.30pm to Dalmore Reserve – A native bush walk.	**Contact:** Maureen Howard, email mo4planet@gmail.com, ph. 021 206 3593.