



TRILEPIDEA

NEWSLETTER OF THE NEW ZEALAND PLANT CONSERVATION NETWORK

Please send news items or events to events@nzpcn.org.nz

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Council member guest editorial

Welcome to this month's newsletter.

I have just recently started training for trail running events; 'Trail running', how's that connected to the NZPCN and plants, I hear you say. I used to think working outside and having a physical job was all that I needed but it's not until you have that 'you're not getting any younger, your health... etc.' talk from the doctor, that I knew I needed to do something about it! The thought of how can I kill two birds with one stone came to mind, so combining some sort of physical activity and my love for native flora brought me to trail running. Now this is where I can see a connection—check out the distribution maps section on the website (http://nzpcn.org.nz/observation_site_search.asp) and the phenology section. With a little bit of homework or planning before you head out, you can mix a bit of pleasure and pain in one of your training sessions. Uphill stages are good for making some of your own observations. With a bit more planning, weekends away can be easily organised. For those who are recording their observations, keep it up. The more information that is added the better.

It's great to see contributions to our newsletters from members. Reading Liz Overdyck's story about *Dactylanthus* in last month's newsletter has given me hope about our specimens that we have had for a couple of years at the Auckland Botanic Gardens. It's just a waiting game now. And in this month's newsletter seeing Moturoa School carry on with its successes is great. Keep it up. We love receiving articles of what people are up to, adventures they have been on and any observations they have made. Local 'good news' stories like the New Zealand spinach back in Taranaki are very welcome. Keep them coming to info@nzpcn.org.nz.

Happy reading.

Kerry Gillbanks

(kerry.gillbanks@aucklandcouncil.govt.nz)

Lost plant back in Taranaki

Sarah Foy (sfoy@xtra.co.nz)

Senior botanists joined junior botanists in a mission to re-establish a New Zealand spinach plant on the North Taranaki coast near Whitecliffs last week. Sarah Foy talks to two of the men behind the botanical initiative.

It was a camping trip. Botanists from Wellington pitched tents in Easter 1978 at the North Taranaki coast, near the now-existent Whitecliffs Walkway. It was a holiday—after all it was Easter—but there was purpose not just pleasure in the jaunt north by the city's botanical society. Colin Ogle, a former Taranaki man, then living in Wellington, helped to lead the trip. His knowledge of Taranaki plant life and vegetation was wide-ranging. He hails from a Hawera farming family of five children. Younger brother Nigel Ogle is the brains behind renowned tourist destination Tawhiti Museum.

"Over the years I got to explore quite a bit of Taranaki and I'd been up to Whitecliffs earlier with my wife and young son."

PLANT OF THE MONTH – *CARMICHAELIA MURITAI*



Carmichaelia muritai. Photo: Jan Clayton-Greene.

Plant of the Month for July is *Carmichaelia muritai* (coastal tree broom). *Carmichaelia muritai* is an upright broom that can grow to 5–6 m tall. It is endemic, found only in Marlborough, in the vicinity of Clifford Bay. The compact branchlets are grey-green and deeply grooved. Leaves are reduced to mere triangular scales on the mature shoots. Flower petals are white with purple-violet markings and appear over the summer months.

It makes an excellent garden plant and is easy to grow in a sunny, free draining spot. It can be grown from cuttings but does best from seed. The seed can be chipped or lightly sanded before sowing to allow water to penetrate the seed coat; this increases the chances of successful germination.

Carmichaelia muritai is nationally endangered. Only two small natural populations are known and are under threat from browsing animals, weeds and fire. The Network fact sheet for *Carmichaelia muritai* may be found at:

www.nzpcn.org.nz/flora_details.asp?ID=8

Their campsite was an idyllic spot by the mouth of the Wai Pingao stream, near where the waterway meets the coast. And that's where they found New Zealand spinach (*Tetragonia tetragonioides*) a sprawling edible plant struggling to survive in its natural habitat.

Along for the trip was the late Tony Druce, famous in New Zealand botanical circles for his unparalleled ability to recognise species in the field. He'd surveyed a lot of Egmont National Park while working for the DSIR (now disbanded) and explored much of the coastline, although not this North Taranaki spot. "He came along partly because he loved field trips but also because it filled in gaps in his own knowledge," recalls Colin. Tony's keen eye spotted the spinach. Intrigued, he took home material—seeds or cuttings, Colin is not sure. A year or two later he was back in touch, asking Colin if he fancied growing some of the spinach in his Wellington garden. "He said it was a very good vegetable, they ate it all the time and it was easy to grow."

The Ogle family duly planted their specimens, finding it useful throughout the year. It's a semi-herbaceous spreading shrub with distinctive fruit and tiny yellow flowers. Colin describes the seed heads as small and hard, covered with prickly horns at the end. "It's nothing like ordinary spinach," he says, which is more upright, resembling the growth habit of beetroot or silver beet. Its Maori name is kōkihi, and there's also a climbing variety, traditionally seen under boxthorn hedges on old Taranaki properties", says Colin.



NZ spinach, *Tetragonia tetragonioides*. Photo: Jeremy Rolfe.

In 1988 the Ogles shifted to Wanganui. Since then, they've lived in three houses in the city, each time taking their spinach with them. Over the years, Colin says he attempted to get DOC interested in transplanting the spinach back to the coast but "for some reason it never happened."

This is where quiet conservationist, Bill Clarkson, comes in. The New Plymouth man is most well-known for his work at Moturoa School, helping establish a native plant programme 16 years ago. This programme and others in the school are model environmental hubs, receiving awards over the years.

Colin knew of Bill. Like himself, Bill is steeped in a botanical heritage. One brother, Jim, was formerly a DOC officer based at Stratford and is currently area manager for the Chatham Island office. Another, Professor Bruce Clarkson, is an author who is head of the biodiversity and ecology research centre at Waikato University.

"It took Bill and Moturoa School and his work there and work with threatened plants in Taranaki to make it happen," says Colin, who sent seeds up north, explaining the plant's history and significance to Bill. The first batch of seedlings found a home alongside New Plymouth's coastal walkway as well as helping establish plants in the school's garden. Over several years new material was propagated.



Bill Clarkson shows the children of Mimi and Moturoa Schools how to un-bag New Zealand spinach.
Photo: Colin Ogle.

This year Moturoa students grew 100 of the seedlings successfully from seed and hardened them off ready for the Whitecliffs project. The planting day last Tuesday also involved senior students from Mimi School. Colin says the spinach's coastal location around New Zealand has probably contributed to its struggle for survival. "It's been pushed out by urban development, by roading, big farms, stock grazing. It's not endangered," he says, pointing out it can be bought in seed packets and is native to Australia, South America and parts of the Pacific. But restoring it to an area where it grew naturally is important to ensure future existence. He's hoping goats grazing nearby won't tuck into the baby spinach plants. "The future is a little bleak but they might just hang on."

As for the young Moturoa and Mimi planters, Colin was impressed. "They certainly went into it with great enthusiasm and appropriate care." Bill Clarkson says Colin's involvement in last week's planting—as well that of his wife Robyn—was important. "He was able to talk to children as they sat on the sand and driftwood at the actual Wai Pingao site about the day the plant was first discovered in 1978 and the history of how it was held in cultivation. This added a lot of significance and sense of history to the occasion."

The students were careful, gentle and efficient in the planting, notes Bill. Their "pride and responsibility in the care they took" was evident. Each plant was carefully patted in and pieces of driftwood added to help shelter and protect them. Also key in the organisation were DOC community relations ranger, Mike Tapp, and biodiversity supervisor, Emily King, who joined the planting team for the day. "The DOC staff are very supportive of this project", says Bill. "If the care these children have taken is any example then I think there is a very good chance for the survival of these plants."

Moturoa School wins another award

Moturoa School, winner of the school section of the Network awards in 2010, has won a fourth environmental accolade with its third award from the Taranaki Regional Council. The small New Plymouth school boasts an environmental and native plant learning programme dating back to Arbor Day 1994, when it first involved children in planting around its grounds. Its gardens are a resource so children learn about New Zealand's unique native flora and, in particular, special local plants such as the Paritutu korokio (*Corokia cotoneaster*).

In 1996, a purpose-built propagation unit (the "Trees for Survival Programme") was established with funding and help from New Plymouth Rotary West and Port Taranaki. Children are involved in the cycle of plant propagation, growing from seed and cutting material, as well as returning the final product back to its natural environment. The focus is Taranaki plants, particularly regionally threatened plants.

Network member Bill Clarkson, a former teacher at Moturoa and driver of the programme, says it's a "powerful learning opportunity for the children".

"Not only do they learn about plants first hand, their scientific name, life cycle, unique characteristics, related habitats and ecosystems - but they are also involved in real conservation experiences and actions," he said. "By putting these plants back into original habitats and locations they know they are helping ensure their survival. This gives a sense of pride and achievement and provides tangible learning experiences as well as a strong connection with their local environment."

One plant they've saved is the regionally threatened coastal plant koheriki (*Scandia rosifolia*) now back at its original Okato site, the Maitahi scientific reserve.

(These two articles, which first appeared in the Taranaki Daily News on 19 June, are reprinted with permission.)

Growing with guano: the ecology of Cook's scurvy grass (*Lepidium oleraceum*) particularly in relation to seabirds

Esther Dale, 2011 Given Scholarship recipient (edal004@aucklanduni.ac.nz)

Lepidium oleraceum (Cooks scurvy grass or Nau) is quite an interesting plant for a number of reasons, one of which is its association with Captain Cook. During his explorations around the New Zealand coastline in the 1700s, Captain Cook is said to have collected 'boatloads' of it to feed to his crew to prevent scurvy (Kodicek & Young, 1969) though at that time 'scurvy grass' referred to several edible species not just *L. oleraceum* (de Lange & Norton, 1996).

Cook's scurvy grass is currently listed as nationally vulnerable (de Lange et al., 2009) and has been experiencing on-going decline at least since European arrival in New Zealand (Norton et al., 1997); it is now almost entirely confined to offshore islands (Norton & de Lange, 1999). Several likely drivers of this decline include herbivory by introduced mammals, garden pests and over-collecting (Norton et al., 1997). Garden pests that can be problematic to *L. oleraceum* include cabbage white butterfly (*Pieris rapae*), "white rust" (*Albugo candida*) and aphids (Norton et al., 1997). *Lepidium oleraceum* tends to grow alongside colonies of seabirds such as penguins, gannets, petrels and shearwaters probably because of the highly fertile and disturbed environment these animals create (Ellis, 2005), which is believed favourable to scurvy grass establishment and growth (Norton et al., 1997). Disappearance of mainland seabird colonies and therefore the associated colony environment with the introduction of mammalian predators is perhaps the most plausible reason for the decline in *L. oleraceum* (Norton et al., 1997).

CURRENT FORUM THREAD

- Where have all our young botanists gone?

Lepidium oleraceum is actually a species complex that occurs from the Kermadec Islands down to the northern South Island (de Lange et al., 2010). My masters research focuses on the role of seabirds in the ecology of *L. oleraceum* s.s. (hereafter referred to as *L. oleraceum*), particularly the influence of their guano on the growth and reproductive vigour of the species. I'm also interested in the soil properties and plant composition of sites with *L. oleraceum*. This will improve understanding of whether seabird colony reductions were a driver of historical *L. oleraceum* declines and if this is continuing. My pilot shade house experiment comparing guano and fertiliser show that higher nutrient regimes elevated growth rates and resulted in increased leaf size. Although I did not quantify leaf colour, it was quite clear that, at low fertility, leaves were often yellow or purple-tinged compared with a deeper green at higher fertility.

Lepidium oleraceum populations are almost entirely restricted to offshore islands, and I've had the opportunity to visit several of these. I've recently been on Stephens Island and I found several different patches of *L. oleraceum* in either human-disturbed sites alongside roads or buildings, or in areas with high densities of bird burrows. It was typically growing amongst ngaio (*Myoporum laetum*) and taupata (*Coprosma repens*) scrub (Figures 1 and 4). On Matariki Island, a small island in the Firth of Thames, *L. oleraceum* was largely growing on bare soil or within a grassy sward (Figure 3). In contrast to Stephens Island, Matariki Island had much shallower soil and very few bird burrows.

Both Stephens and Matariki Islands have a range of sizes of *L. oleraceum*, suggesting there is self-perpetuation of populations. On Stephens Island, the smaller patches of *L. oleraceum* typically comprised one large individual with many smaller plants surrounding it, which suggests seed often falls near the parent plant. I did observe several solitary plants on Stephens Island, which may become larger patches if they persist. *Lepidium oleraceum* was often found growing next to the remains of a dead plant, usually poroporo (*Solanum aviculare*), likely establishing in the



Figure 1: The author in field work on Stephens Island with *Lepidium oleraceum* amongst scrub in lower middle of picture. Photo: Alwyn Dale



Figure 2: *Lepidium oleraceum* growing in the shade house as part of my guano experiments.



Figure 3: *Lepidium. oleraceum* on Matariki Island.



Figure 4: Tagged *Lepidium oleraceum* plants growing under scrub on Stephens Island.

gap opened up by its death. This opportunistic strategy can also be seen by its presence at human-disturbed sites such as road verges or behind the rangers' house. This was less clear on Matariki Island, perhaps due to the higher availability of bare soil without requiring such disturbance.

Flowers and seeds were abundant at both sites, which suggests pollination is not limiting. I noticed the flowers have a scent similar to alyssum (*Lobularia maritima*) and, in the wild, the main visitors to *L. oleraceum* flowers were small flies.

In my population surveys I have measured 60 plants on Matariki Island, 103 on Stephens Island at seven different sites and estimated around 35 individuals on Motukino (Fanal Island). There are likely to be even more plants on Stephens Island since I did not search the steep western side or southern end of the island. Similarly, with Motukino, the number is probably an underestimate since my initial count on Matariki was 30 plants compared with the 60 that I measured when doing a systematic survey and I only visited one of the two known populations. This total of 95 plants I have seen on Motukino and Matariki Islands is good considering the total estimate for the northern North Island in the Coastal Cresses (Nau) Recovery Plan (Norton & de Lange, 1999) was around 300 plants at 32 sites. The numbers on Matariki Island are particularly promising and suggest that management has been effective in increasing population numbers from the single plant present in 1971 (Norton & de Lange, 1999). I still have several more islands to visit if all goes to plan and this should give an even better indication of the current status of wild *L. oleraceum* s.s. populations.



Figure 5: *Lepidium oleraceum* with seeds on Matariki Island.

Acknowledgements

Thanks to my supervisors Bruce Burns and Peter de Lange, NZPCN and Auckland Botanical Society for funding, DOC for sorting out permitting and transport to Stephens, Motukino and Mahuki Islands, Ngāti Koata, Ngāti Maru and Ngāti Rehua for allowing me to visit these islands, all my field and shade house helpers, and the many people who have shared their experience on *L. oleraceum* and discussed my research with me.

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Network's online book library continues to grow

The Network's online library of books made by Network members continues to grow. You can now make your own plant books in an automated way using the website text and photos. You do this by clicking on "Add to book" when browsing a species page, then clicking on "View book" to see what species you have added and to review the layout of your book. For instructions on how to make a book see: http://nzpcn.org.nz/page.asp?flora_make_book

In addition, once a book is made you can then save the book into the website's online library for others to download. Eight books have been made since this functionality was added and they are all available for free—see <http://nzpcn.org.nz/library.asp>.

Book titles in the library include:

- Wairarapa Moana threatened flora
- Some species on Fortrose Spit, Southland
- Some shoreline species at Waituna Lagoon
- Some trees of Field Reserve, Paraparaumu
- Large daisies of Mt Burns (*Celmisia*, *Dolichoglottis*, *Haastia*), Fiordland
- New Zealand's favourite plant 2011

Books may be useful to community restoration groups, schools or covenant owners wanting to know the plant species that grow at their site. You can also make books of weeds to educate people about what species to look out for and control. You can also make books of threatened plants for a particular place or the native trees growing in your garden. We encourage you to make use of this website feature to make plant books for you to use and for your friends and colleagues to read.



1000th person joins the Plant Conservation Network

It is only 9 years since the New Zealand Plant Conservation Network was founded but by the end of June the 1000th person joined the organisation.

The Network is already New Zealand's largest Non-Governmental Organisation devoted solely to the protection and restoration of our unique and globally important indigenous plant life.

Benefits of membership include:

- Receiving the monthly plant conservation newsletter (*Trilepidea*)
- Access to all the features of the website including thousands of members-only images, the web forum and the ability to download plant distribution data and make your own plant books
- Discounts on the price of Network publications and conference attendance
- Knowing that you are contributing to plant conservation in New Zealand through your subscription fees.

If you know anyone who might be keen to join the Network please send them this link and encourage them to get involved:

- [Join the Network](#)

Changes in personal details

It is possible for members to change personal details on our database; this is particularly important if it is the e-mail address that has changed because we harvest the e-mail addresses in order to send out the monthly notice regarding the newsletter. To update any personal details, login on the right hand side of the Home page of our website (www.nzpcn.org.nz). A button "My details" will then appear. Click on that button and the details we have on our database will appear. After making the changes you have to enter your password and confirm it. The changes are then stored in the database.

UPCOMING EVENTS

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

Auckland Botanical Society

Meeting: Wednesday 1 August at 7.30 p.m. for a talk by Dave Pattermore titled 'Pollination'. **Venue:** Unitec School of Health Sciences, Gate 4, Building 115, Room 2005.

Contact: Maureen Young (youngmaureen@xtra.co.nz).

Field trip: Saturday 18 August to Clevedon Scenic Reserve.

Leader: Bec Stanley (rebecca.stanley@aucklandcouncil.govt.nz).

Kaipatiki Project

Community Planting Day: Saturday 4 August at 9.30 a.m. **Venue:** Eskdale Reserve (cemetery end), Glenfield Road, Glenfield, Auckland. Free BBQ for all planters, bring a spade if you have one.

Info: www.kaipatiki.org.nz/volunteer

Weekend Nursery Bite: Saturday 11 August, 9.30 a.m. – 12 noon. Monthly native plant propagation workshop August topic: coastal plants. **Venue:** Kaipatiki Project Environment Centre, 17 Lauderdale Road, Birkdale, Auckland. **Cost:** \$20 per person.

Booking essential: online at www.kaipatiki.org.nz/courses or ph: 09 482 1172 or e-mail admin@kaipatiki.org.nz

Waikato Botanical Society

Field trip: Saturday 28 July (to be confirmed) to Silvesters Bush, Te Miro. **Meet:** Landcare Research Gate, 10 Silverdale Rd at 9.00 a.m. or Cambridge BP at 9.30 a.m. **Grade:** easy/medium.

Leader: Kerry Jones, ph: 07 855 9700 (h), mobile: 027 747 0733, e-mail: km8jls@gmail.com

Field trip: Sunday 19 August (bad weather reserve day 9 September) to Bridal Veil Falls – orchid trip. Meet: 9.00 a.m. at Countdown Supermarket, Whatawhata Rd, Dinsdale or 9.40 a.m. Te Mata School. **Grade:** easy/medium.

Leader: Cynthia Roberts ph: 07 849 4935, mobile: 021 123 1060, e-mail: croberts@DOC.govt.nz

Meeting: Monday 20 August at 5.30 p.m. for a talk by Marie Brown (U of Waikato PhD student) titled 'Compensating for ecological harm in development —what are we really achieving?'

Venue: Waikato Environment Centre, 25 Ward Street, Hamilton.

Rotorua Botanical Society

Field trip: Saturday 11 August to Lake Atiamuri. **Meet:** the car park Rotorua at 9.00 a.m. or Lake Atiamuri 10.00 a.m.; this is a boat trip so you must tell the trip leader that you are coming. **Grade:** easy. **Cost:** donation for boat fuel.

Leader: Willie Shaw, ph: 07 345-5912, e-mail: willie@wildlands.co.nz

Wanganui Museum Botanical Group

Meeting: Tuesday 7 August at 7.30 p.m. for the AGM and members' evening. **Venue:** Museum's Davis lecture theatre.

Contacts: Robyn and Colin Ogle,
ph: 06 347 8547,
e-mail: robcol.ogle@xtra.co.nz.

Field trip: Saturday 1 September to Marangai Bush. Meet: Police Station at 9.00 a.m. **Leader:** Clare Ridler.

Contacts: Robyn and Colin Ogle,
ph: 06 347 8547,
e-mail: robcol.ogle@xtra.co.nz.

Wellington Botanical Society

Field trip: Saturday 4 August to Three Karori reserves, Burrows Avenue Reserve, Wright Hill Reserve and Birdwood Reserve.

Meet: 9.30 a.m. on Karori Rd near Burrows Ave.

Co-leaders: Chris Horne,
ph: 04 475 7025, and
Barbara Mitcalfe, ph: 04 475 7149.

Meeting: Monday 20 August at 7.30 p.m. the AGM followed by the AP Druce Memorial Lecture by Brian Rance, DOC Southland titled 'A botanical tour of (parts of) Southland'.

Venue: lecture theatre MYLT101, ground floor Murphy Building, west side of Kelburn Parade. Enter building off Kelburn Parade about 20 m below pedestrian overbridge.

RSNZ Wellington Branch

Meeting: Wednesday 25 July at 6.00 p.m., the 2012 Hudson Lecture by Associate Professor Phil Lester, School of Biological Sciences, Victoria University of Wellington, titled 'Invasion of the Wasps: Predation, Competition and Conservation Biology'.

Venue: the separate lecture theatre block at rear of the VUW Law School (Old Government House), in lecture theatre GBLT 1 or the adjacent GBLT2, as allocated by VUW.

Info: RSNZ Wellington Branch
website: <http://wellington.rsnzbranch.org.nz/hudsonf.htm>

Nelson Botanical Society

Field trip: Sunday 19 August 19 the Blackwater methane flare in the Murchison area where we will have a sausage sizzle as well as botanise!

Meeting: Monday 20 August at 7.30 p.m. for a talk by Leon Perrie, Te Papa, titled '*Pseudopanax*'

Contact: Beryce Vincenzi,
ph: 03 528 4549 if you wish to join us.

Venue: Jaycee Room, Founders' Park.

Canterbury Botanical Society

Meeting: Friday 3 August for a talk by Luke Martin titled 'Tasmania'. **Venue:** Room A5, University of Canterbury.

Contact: Gillian Giller,
ph: 03 313 5315,
e-mail: ggillerma1@actrix.gen.nz.

Otago Botanical Society

Meeting: Wednesday 15 August at 5.00 p.m. for the 11th Annual Geoff Baylis Lecture to be given by Dr Wendy Nelson, NIWA. **Venue:** Burns 2 Lecture Theatre, University of Otago. Drinks and nibbles will be available from 5:00 p.m. in the Castle Lecture Theatre Concourse.

Contact: David Lyttle,
ph: 03 454 5470,
e-mail: djlyttle@ihug.co.nz.

Field trip: Sunday 19 August to Molteno's Regenerating Bush, Opoho. **Meet:** at the Department of Botany car park at 9.00 a.m.

Contact: Allison Knight,
ph: 03 487 8265,
e-mail: alli_knight@hotmail.com.
