TRILEPIDEA

Newsletter of the New Zealand Plant Conservation Network

No. 125.

April 2014

Deadline for next issue:
Thursday 15 May 2014

SUBMIT AN ARTICLE TO THE NEWSLETTER

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

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

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

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

Postal address:
P.O. Box 16102,
Wellington 6242,
NEW ZEALAND

PLANT OF THE MONTH, p. 2

Entelea arborescens. Photo: John Sawyer.

President's message

Hi, Everyone.

The Network is very pleased to announce the support of another sponsor. In addition to our current sponsors, Coastlands Plant Nursery Ltd, based in Whakatāne, has also offered support. Sponsorship is essential to keep the Network functioning, to maintain, enhance, and grow the website, and to provide support to all Network members through the Administration Officer, Eric Scott.

It was exciting to recently see *Thelypteris confluens* (At Risk-Naturally Uncommon) again in the field. Whilst this species has previously been recorded from various wetlands on the Rangitāiki Plains, eastern Bay of Plenty, it has been somewhat difficult to find over the last decade or so, and I have not seen it in this area since the mid-2000s. This could be because of the timing of my field visits because it dies back over winter, but dead fronds can generally be recognised at most times of the year, so I was keen to relocate it when visiting a wetland where I had previously seen it in 2000. This wetland was the subject of a significant ground-based grey willow control operation in the early 2000s. So, on a recent visit in mid-April of this year, it was exciting to see a relatively large population of *Thelypteris confluens* amongst dense *Machaerina rubiginosa* (see Plates 1 and 2). This wetland also has a substantial population of maru (burr reed, *Sparganium subglobosum*), with its distinctive spear-shaped, soft, spongy, light green leaves. Burr reed has very distinctive flowers and seed heads (see Plates 3 and4), although no flowers or seeds were present in April. Spotless crake were also "abundant", as were fernbird, and both species were very vocal.

Plate 1: *Thelypteris confluens*, amongst *Machaerina rubiginosa*, *C. tenuicaulis*, and *C. propinqua* × *C. robusta*.

Plate 2: Fertile fronds of *Thelypteris confluens*, entwined in dense *Machaerina rubiginosa*.

In late March, I visited a site with easy public access on the southern side of Lake Maraetai, a hydro lake on the Waikato River. A great selection of *Carex* species was present: *Carex lessoniana*, *C. geminata*, *C. fascicularis, C. maorica, C. dipsacea, C.*

PLANT OF THE MONTH – *ENTELEA ARBORESCENS*

Entelea arborescens. Photo: Jeremy Rolfe.

Plant of the Month for April is *Entelea arborescens*, whau. This fast growing small tree is a member of the hibiscus family (Malvaceae). White flowers reminiscent of its more tropical cousins appear in spring to mid-summer followed by fruits that are covered in firm brown spines and contain many small black seeds. Its large leaves are papery thin and, at their extreme, can reach 50 cm long, but are most usually being 10–25 cm long and wide. Whau is found on the Three Kings Islands and is common throughout the northern half of the North Island, becoming more isolated in the Wairarapa and Wellington regions. In the South Island, it is found in North West Nelson. It is not incredibly long lived, perhaps up to 15 years, and grows best in an open sunny situation in areas that don't receive frosts. The wood is remarkably light and was once used as floats for fishing. The Network factsheet for whau can be found at: http://www.nzpcn.org.nz/flora_details.aspx?ID=1377

virgata and *C. secta* could all be seen at one site. So, for central North Islanders who are keen to brush up their *Carex* identification skills, this is a great place to see quite a number of species. The best time to do this is in March, when the seed heads are still in good condition.

Plate 3: The distinctive leaves of burr reed can be seen in the centre of this photograph.

Plate 4: Burr reed flowers and seed clusters, Five Mile Gate Swamp, February 2014.

The Council meets in late May. One of the items on our very full agenda is the selection of a location and venue for the AGM in October-November, and discussion of the format of the evening (e.g. panel, speaker, activity), and to delegate organisation of the AGM. All input and ideas are welcome. Please send these to Eric Scott at info@nzpcn.org.nz.

Please keep sending your interesting articles and notes for the newsletter to the editor.

Have a great month out there.

Sarah Beadel
President

News from Life Force Restoration Trust

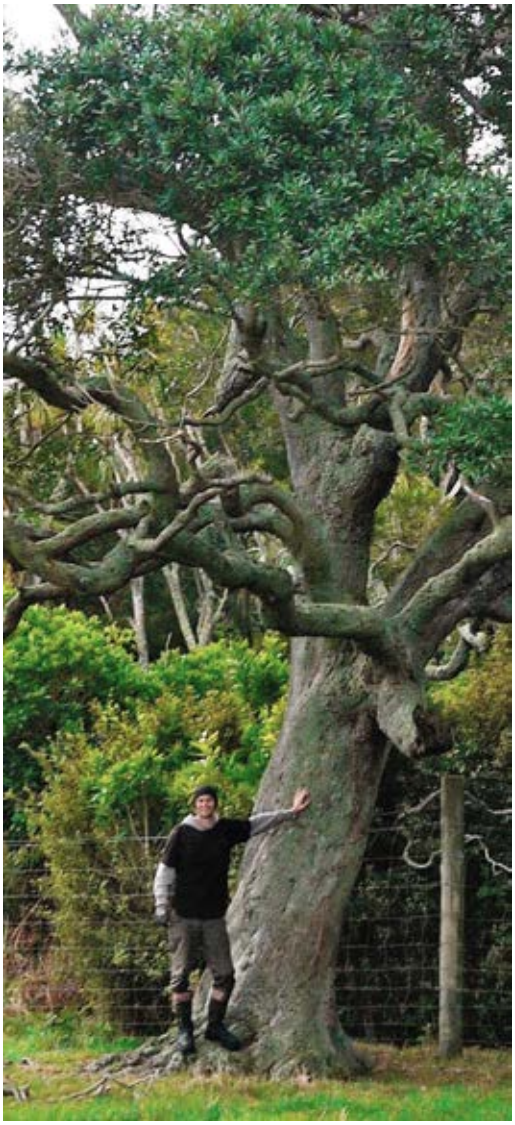
In its March update, the Trust has two items of good news concerning plants. First, the update reports that the Department of Conservation staff have found four more kakabeak plants in the wild at Ruakituri. This welcome find further adds to the 14 plants found by Trust manager, Pete Shaw. The find is significant because it widens the pool of wild-grown seed that can be used in the Trust's propagation efforts. Secondly, the Trust reports that, on its Pohukura property, it has planted 5500 seedlings of *Pittosporum turneri*, which increases the population by over 10 per cent. These seedlings were propagated from seed collected in May 2009. When mature the seedlings will form a seed nursery for the plant.

Inquisitive nature leads to exceptional find

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

This is a short note about an exceptional find. The low-lying coastal plains and dunes of the Kapiti area were once covered in vegetation. This area, in ecological terms, is now referred to as part of the Foxton Ecological District. The swampy areas and wetland forests were dominated by kahikatea, whereas the dune forests had more dry-tolerant species such as totara, matai, miro, hīnau, titoki, and akeake. Most of the forests were cleared for agricultural use during the late 1800s and early 1900s, which supplied meat and vegetables for Wellington as well as the dramatic local residential influx.

A few remnants were preserved by farmers and local iwi. Of those that remain, most are less than a hectare in size and often in poor health. A small remnant of dune hollow, or swamp forest in the Ōtaihanga area (which is on private property and the exact location cannot be given) recently revealed a secret that had gone unnoticed for a 100 years. This remnant is a typical example of what was once common; it is dominated by towering kahikatea and pukatea, which are entangled with kiekie, supplejack and pohuehue. Many other substantial species are also present, including tawa, titoki, pigeon-wood, broad-leaf, mahoe, nikau, mapou, lancewood, swamp lawyer and New Zealand jasmine. The remnant is surrounded by numerous species of sedge and rush, as well as ongaonga.



Brent Buckler leans on a fantastic find—pokaka/ *Elaeocarpus hookerianus*.
Photo: Matt Ward

Although there are not many species present in this small remnant, it contains a rare tree species that has been noted only in one other location in the entire Foxton Ecological District. The remnant is currently being carefully restored by its owners using eco-sourced plants for re-vegetation, trapping pest animals and controlling weeds with removal being undertaken by a local contractor. This local contractor, Brent Buckler, is responsible for finding the tree. The tree, which many people will be familiar with its juvenile form, can be absolutely puzzling to observe is pokaka.

Pokaka, *Elaeocarpus hookerianus*, is commonly spotted by keen botanists and photographers alike as a juvenile because of its unusual leaf composition. Noticing the mature form of this species can be difficult because it can easily be mistaken for its close relative hīnau, *Elaeocarpus dentata*. This mistake was almost made by Brent when

he first laid eyes on the majestic specimen. Apart from one relatively low growing limb, the foliage is a few metres out of reach. Brent cleverly took a few leaves home to study and realised what he had in fact found. A few days later he contacted the Kapiti Coast District Council Biodiversity Advisor, Rob Cross, with questions about why he had not seen this species before. Rob promptly advised Brent that what he had found was a first for the Kapiti Foxton Ecological District area and was very significant, and quite exciting. The other important factor that was most exciting for Rob, was that the tree was in fruit, therefore providing an excellent source of eco-sourced stock from which to propagate and add to the remnant itself and other nearby restoration projects.

Elaeocarpus hookerianus, two forms of the unusual and variable juvenile foliage. Photos: Matt Ward.

Elaeocarpus hookerianus has a divaricating juvenile form very different from its adult form. The juvenile plant has densely tangled branches that are alternatively laden with pale greenish white to brownish green to purplish brown leaves. The leaves vary greatly, they may be short or long, broad or narrow and with various lobes or even toothed (see photos). The adult foliage is uniform, the leaves are lance shaped with a blunt tip and the margins have rounded teeth and are flat, unlike hīnau. The white flowers droop and look like a lacy ball gown, similar to but smaller than hīnau. The ripe fruit are egg-shaped and ripen to a dark purple, and are also smaller than the fruit of hīnau. The mature tree can reach 12-15 m high, with a trunk of up to 1 m diameter.

Elaeocarpus hookerianus mature foliage. Photo: Matt Ward.

The specimen Brent found was approximately 12 m high with a trunk diameter of about 800 mm, and a crown that would be 10 m across. The fact this tree had never been noticed before is extraordinary since the remnant had been botanised in the late 1980s and this gorgeous specimen would have been well established even back then. Brent's keen eye and effort to identify this lovely specimen is worthy of celebration, great work Brent; keep it up!

Lichen Field guide—correction and explanation

Allison Knight (alli_knight@hotmail.com)

I've just had an order for a waterproof copy, as seen on the NZPCN website and now realise that a couple of misperceptions have crept in on page 9 of *Trilepidea* 124. I'd be grateful if you could correct them.

The lichen illustrated is *Haematomma alpinum* (not *alpina*) and the book is not totally waterproof; the cover is laminated on both sides and the glossy pages are somewhat water resistant. It does slip neatly into a ziplock plastic bag for travelling. The first print run has sold out, and we've just had a second run printed, so there does seem to be quite a lot of interest out there.

Tiger stripes and leopard spots: a coastal shrubland in lowland Canterbury before and after fire

Susan Richardson, Landcare Research (richardsons@landcareresearch.co.nz)

Around Christchurch, natural ecosystems with native-dominated vegetation are few and far between so every little bit counts. One quietly remarkable reserve is a small 100 ha area of native shrubland tucked in behind Birdlings Flat, a tiny coastal settlement about half way between Christchurch and Akaroa, on the south western edge of Banks Peninsula. Driving past on the highway, the vegetation on the reserve looks most like "grey scrub". This descriptor is a rather apologetic name given to some of the most enchanting and ecologically important patches of native vegetation left on the Canterbury Plains. As with so many of these special places, it doesn't take long to realise how remarkable it is. Even before looking at the plants, the landform presents one of the best examples in New Zealand of a stony beach-ridge/swale complex, created in the wake of the advancing Kaitorete Spit. The distinctive "tiger stripes" of vegetation reflect the underlying crests of gravel situated between swales of accumulated organic material and are best appreciated by looking down from the surrounding hills (Figure 1). The stony beach ridges support a rich mosaic of native woody associations including many shrub species (e.g., *Coprosma propinqua*, *Coprosma crassifolius*, *Muehlenbeckia complexa*, *Discaria toumatou*), tangled together and interconnected with a rich mixture of lianes (*Clematis* spp., *Parsonsia* sp., *Rubus squarrosa*). In stark comparison, the more soily swales are covered with a rich grass and small herb community. The ridge and swale complex is recognised as being a naturally uncommon ecosystem in New Zealand (see: http://www.landcareresearch.co.nz/publications/factsheets/rare-ecosystems/coastal/stony-beach-ridges) and has been classified as 'Endangered' using the IUCN Red List criteria for ecosystems. The reserve is managed by Canterbury City Council (CCC), which maintains regular weed control measures to remove some of the many invasive woody weeds in this area, including karo (*Pittosporum crassifolius*). The reserve is leased for low-level grazing by a small flock of sheep. However, rabbits are abundant and hares and hedgehogs are also common in the area.

Figure 1. "Tiger stripes" of vegetation at the Birdlings Flat Reserve seen from above. The distinctive pattern reflects the underlying stony ridges and soily swales. The burned area is visible in the foreground.

One of the challenges of managing these lowland reserves in eastern New Zealand is the constant threat from accidental fire. On Sunday 12 January 2014, a fire spread rapidly from the Akaroa highway into the reserve and burned approximately a quarter of the shrubland. Understanding how these precious fragments recover—indeed, establishing *if* they recover—is critical for conservation

planning. One of the fascinating aspects has been appreciating how fire moves through vegetation. In particular, we were astonished by the "leopard spots" of burned shrubs among the unburned grasses (Figure 2). In places, however, the burn was wholesale and even the organic soil has been incinerated, exposing bare gravels (Figure 3). Being so close to our office in Lincoln, we decided to establish an experiment to determine how the shrubland recovers after a fire, either with grazing animals, or with them fenced out. We have set up a series of 5 × 5 m permanent plots, half of which are open to grazing animals, and half of which are fenced. We also have plots in the adjacent unburned shrubland. A critical question we would like to resolve is whether low-level grazing actually benefits the recovery of the native shrubs by supressing exotic grasses, notably *Dactylis glomerata*, or whether herbivores remove regenerating seedlings and sprouts during the recovery phase.

Figure 2. "Leopard spots" of burned shrubs (mostly *Muehlenbeckia complexa*) in a matrix of unburned grasses. Photo taken two weeks after the fire.

Figure 3. An area of shrubland that burned intensely, two weeks after the burn.

Figure 4. Rapid recovery of pastoral grasses (mostly *Rytidosperma* spp. and *Poa pratensis*) 14 weeks after fire, Birdlings Flat Reserve. The fence is part of an experiment by Landcare Research and Christchurch City Council to study shrubland recovery after fire without grazing.

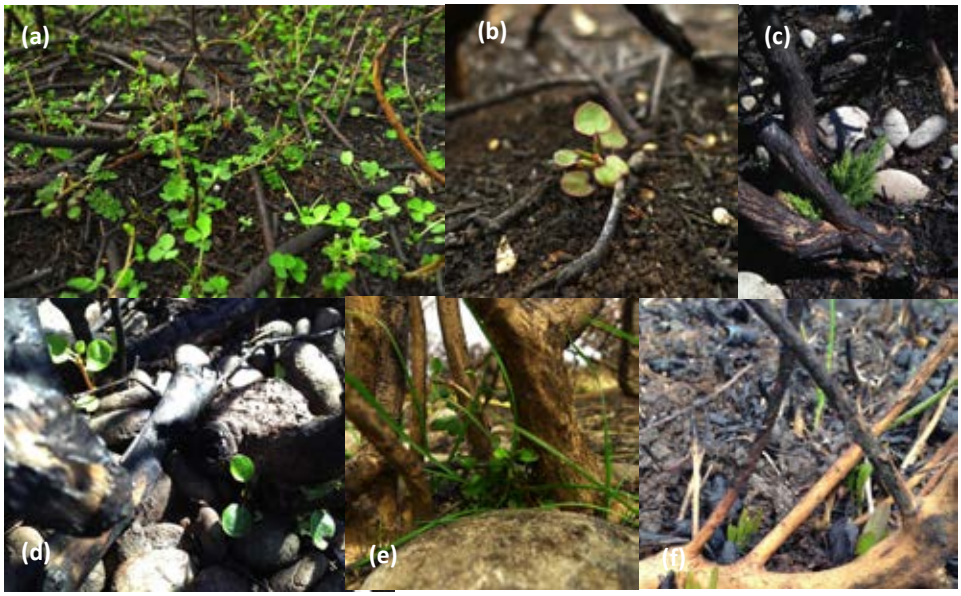


Figure 5. Sprouting or seedling bank responses by shrubs at Birdlings Flat: (a) *Sophora* seedlings, (b) *Muehlenbeckia complexa* (c) *Ulex europaeus* (d) *Coprosma crassifolius* (e) *Coprosma propinqua* and (f) *Melicytus alpinus*.

Figure 6. *Parsonsia capsularis* flowering in the unburned shrubland. April 2014.

Figure 7. *Clematis afoliata* woven into and onto a Coprosma propinqua shrub at Birdlings Flat in the unburned area of the reserve.

Fourteen weeks have passed since the fire, and the response by the native shrubland is already astonishing (Figures 4–6). I was very sceptical that native species would survive fire, since fires were naturally very uncommon before people first arrived in New Zealand and normally kill most native plants. I've had to eat my words. *Coprosma* spp., *Melicytus alpinus* and *Muehlenbeckia complexa* are currently sprouting prolifically, and *Sophora* (we think *prostrata*) seedlings are forming vivid green carpets under dead adults, clearly from seedbanks in the blackened soil. This resilience is heartening but the cynic in me still wonders if these sprouts will survive a winter and replace the adults lost in the fire. One group of plants that have definitely not survived are the lianes, which have failed to sprout (Figures 7, 8). However, seedlings of *Convolvulus waitaha* are appearing in patches amidst the ashes so perhaps these species rely more on seedlings than sprouts. We are keen to age the shrubs on site using some of the dead, burned stems to estimate how long it will take for a mature shrubland to establish.

The City Council has been superb in helping us get moving quickly in setting up our experimental exclosures, and we hope the insights from the grazing experiment will inform the ongoing management of this site.

Opportunities to study disturbance events, such as fire, cannot be planned under normal research activities and serendipitous events such as this one present an invaluable opportunity to enhance our understanding of ecosystem resilience. Let's hope this ecosystem bounces back.

Figure 8. *Convolvulus waitaha* germinated rapidly just six weeks after the fire.

UPCOMING EVENTS

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

Auckland Botanical Society

Meeting: Wednesday 7 May at 7.30 p.m. for a short talk on the camp at the Catlins followed by Mike Wilcox talking on the pea family. **Venue:** Unitec School of Health Sciences, Gate 4, Building 115, Room 2005.	**Contact:** Mike Wilcox, email: mike.wilcox@xtra.co.nz
Field Trip: Saturday 17 May to Lake Otatoa, Kaipara South Head.	**Leader:** Dave Wilson. **Contact:** Maureen Young, email: youngmaureen@xtra.co.nz.

Kaipatiki Project

Field trips: Saturday 10 May, and 14 June for 'Bush Walk & Talk - Waterfalls Series'. **Where**: North Shore, Auckland. **Time**: 9.30 - 11.30 a.m. **Cost:** $15 per person for all three guided walks.	**For locations and to book online go to:** http://kaipatiki.org.nz/courses/bush-walk-and-talk/ or ph: 09 482 1172.

Waikato Botanical Society

Field trip: Saturday 3 May for a Threatened Plant Collection working bee. **Meet:** 10.00 a.m. at Waikato University Gate 8, Hillcrest Rd, outside Science and Engineering main entrance (E-F link stairway).	**Contact:** Liz Overdyck, ph: 07 825 9743, email: eg3@waikato.ac.nz.
Field trip: Saturday 10 May to Rock Peak for a *Hebe scopulorum* visit. **Meet:** 9.00 a.m. at the Waitomo I-site. **Grade:** medium-hard; bring good footwear and lunch.	**Contact:** Thomas Emmitt, ph: 07 878 1055 (work) or 021 152 3030 (mobile), email: temmitt@doc.govt.nz.

Rotorua Botanical Society

Field trip: Sunday 11 May to Tarawera Trail to Hot Water Beach. **Meet:** car park Rotorua at 8:30 a.m. **Grade: m**edium (possibly c.8 km walking on a formed track.	**Leader:** Chris Bycroft, ph: 07 346 3647 (hm); email: chris.bycroft@wildlands.co.nz (Chris needs to know probable numbers by Thursday 1 May so that boat options to Hot Water Beach can be organised.
Meeting: Mid May - Rotorua Botanical Society Lecture - Dr Matt Buys - South Africa Topic	**Venue and time:** To be announced.

Wanganui Museum

Field trip: Saturday 3 May to Sutherland's Bush. **Meet:** Police Station at 9.30 a.m.	**Leader:** Jim Howard. **Transport coordinators:** Colin & Robyn Ogle, email: robcol.ogle@xtra.co.nz.
Meeting: Tuesday 6 May at 7.30 p.m. for a talk by John Williamson on 'Life of a QEII National Trust Representative'. **Venue:** Museum's Davis lecture theatre.	**Contact:** Colin Ogle, email: robcol.ogle@xtra.co.nz.
Meeting: Tuesday 3 June at 7.30 p.m. for a talk by Dr Roger Shand titled 'Dune geomorphology on western side of Wanganui'. **Venue:** Museum's Davis lecture theatre.	**Contact:** Colin Ogle, email: robcol.ogle@xtra.co.nz.

Wellington Botanical Society

Field trip: Saturday 3 May to Puriri and Broad Gully tracks, East Harbour Regional Park. **Meet:** 9.30 a.m. on Wainuiomata Rd, just past first roundabout at foot of Wainuiomata Hill.	**Leader:** Chris Hopkins, ph: 04 564 3980 (TBC); **deputy-leader:** Bev Abbott, ph: 04 475 8468 (TBC).
Meeting: Monday 19 May for the Annual Members' Evening; share your botanical slides and photographs taken on BotSoc trips, your paintings, drawings and your botanical readings.	**Venue:** VUW Lecture Theatre M101, Murphy Building ground floor, west side of Kelburn Parade.

Nelson Botanical Society

Field Trip: Sunday 18 May to Delaware Bay; phone leader to register.	**Leader:** David Grinsted, ph: 03 542 4384.
Meeting: Monday 19 May at 7.30 p.m. for a talk by Uta Purcell titled 'Tien Shan Mountains, Kazakhstan'.	**Venue:** Jaycee rooms, Founders Park.

Canterbury Botanical Society

Field trip: Saturday 10 May to the Rockwood Range, Hororata. **Meet:** at Yaldhurst Hotel car park at 8.00 a.m. for carpooling.	**Leader:** Jason Butt, ph 03 355 8869.

Te Ara Kakariki Greenway Canterbury Trust

Field Day: Saturday 10 May at 9.30 a.m. at Coes Ford Reserve for a native plant restoration field day. Learn how to effectively restore native habitats, save time and money at this free event.	**Registrations and more information:** register@kakariki.org.nz.
Autumn Plantout: Sunday 18 May beginning at 10.00 a.m. at Chamberlains Ford and then continuing to Silverstream.	**Register:** register@kakariki.org.nz and a registration package with all details will be sent to you.

Botanical Society of Otago

Meeting: Wednesday 21 May at 5.20 p.m. for a Botanical Show and Tell. Share your items of botanical interest and talk about them. **Venue:** Zoology Benham Building, 346 Great King Street, behind the Zoology car park by the Captain Cook Hotel. Use the main entrance of the Benham Building to get in and go to the Benham Seminar Room, Rm. 215, 2nd floor. Please be prompt as we have to hold the door open.	**Contact:** David Lyttle, ph: 03 454 5470.
Field Trip: Saturday 24 May to Split Rock; wet weather plan: visit the Truby King Reserve, in the former grounds of Seacliff Hospital. **Meet:** 9.00 a.m. at the Botany Department car park, 464 Great King St. to car pool.	**Leader and Contact:** Maia Mistral, ph: 03 465 8299 evenings or leave a message.