

NEW ZEALAND BOTANICAL SOCIETY

NEWSLETTER

NUMBER 144

June 2021



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Subscriptions

The 2021 ordinary and institutional subscriptions are \$25 (reduced to \$18 if paid by the due date on the subscription invoice). The 2021 student subscription, available to full-time students, is \$12 (reduced to \$9 if paid by the due date on the subscription invoice).

Back issues of the *Newsletter* are available at \$7.00 each. Since 1986 the Newsletter has appeared quarterly in March, June, September and December.

New subscriptions are always welcome and these, together with back issue orders, should be sent to the Secretary/Treasurer (address above).

Subscriptions are due by 30 April each year for that calendar year. Existing subscribers are sent an invoice with the March *Newsletter* for the next years subscription which offers a reduction if this is paid by the due date. If you are in arrears with your subscription a reminder notice comes attached to each issue of the *Newsletter*.

Deadline for next issue

The deadline for the September 2021 issue is 25 August 2021.

Please post contributions to:
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Send email contributions to lara.shepherd@tepapa.govt.nz Files are preferably in MS Word, as an open text document (Open Office document with suffix ".odt") or saved as RTF or ASCII. Macintosh files can also be accepted. Graphics can be sent as TIF JPG, or BMP files; please do not embed images into documents. Alternatively photos or line drawings can be posted and will be returned if required. Drawings and photos make an article more readable so please include them if possible.

Cover Illustration

Celmisia hieracifolia var. *oblonga* from Mt Stokes by Eleanor Burton.

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NEWS

New Zealand Botanical Society News

From the President: Results of Postal Ballot and discontinuation of cheques

As outlined in the Newsletter 143, March 2021, a Postal Ballot was held to approve the 2020 Financial Statements. Voting papers needed to be received by Friday 23 April 2020.

The resolution that the 2020 Annual Financial Statement published in Newsletter 143 (March 2021), be adopted, was carried by a unanimous vote. The Financial Statement has now been lodged with the Registrar of Incorporated Societies and is available online.

Thank you to everyone who took the time to return their voting papers.

There have been many recent changes to the way in which we do banking, with many banks now phasing out the use of cheques. Please be aware that after 1 July 2021, the New Zealand Botanical Society will be unable to accept cheques as a form of subscription payment. Options available to our members from 1 July 2021 will be either direct credit or internet bank transfer. Whilst cash would still be accepted, the Society strongly discourages sending cash in the mail.

Anthony Wright, President, New Zealand Botanical Society

Regional Botanical Society News

■ Auckland Botanical Society

December Field Trip & Christmas Picnic

The December walk and potluck Christmas picnic took place at Whatipu, on the west coast of the Waitakere Ranges. Our base, Whatipu Lodge, had that nice, comfortable bachy atmosphere where Bot Soccers felt quite at home. After depositing our luncheon offerings we meandered slowly down to the coast, discussing the trackside wild flowers until we reached, first the stream, where yellow flag iris (*Iris pseudacorus*) was impersonating raupo (*Typha orientalis*), then the dune slacks where the minute plants that favour such habitats live. *Myriophyllum votschii* was so small as to be almost invisible, and tiny *Lilaeopsis novae-zelandiae* leaves showed the divisions that give it the common name of tape measure plant. Socialising with old friends over lunch was a pleasure after this stressful year.

Taranaki Weekend Camp

For Auckland Anniversary Weekend a good-sized party travelled to Taranaki where we stayed at TOPEC (Taranaki Outdoor Pursuits & Education Centre). The particular aim of the trip was to visit the new Native Forest Restoration Trust's reserve named Taranaki Mahood-Lowe Reserve, situated on the flanks of Mt Taranaki. Another day and a half were spent walking on the mountain in perfect summer weather. It was a pleasure for us Northerners to be reacquainted with the mountain flora. Of particular interest to fern enthusiasts was the finding, after much checking of healthy trees of *Libocedrus bidwillii*, of the strange filmy fern, *Hymenophyllum malingii*. As usual, it was found not on the living trees, but on a dead trunk. An added, and unexpected treat, was visiting the light show at Pukekura Park on Saturday evening.

February Field Trip

Masks were mandatory when travelling on the Waiheke ferry, and our esteemed leader "flew the flag" for Bot Soc by wearing a mask decorated with kowhai flowers. A bus took us to our destination on the island – the Arthur Leigh Titchener Memorial Covenant. Chris Floyd, the QEII representative, and a member of the Titchener family, outlined the history of the reserve. Apart from a wooded gully, the land was in pasture when purchased nearly 40 years previously, and it has been left to regenerate naturally, with only pest control of plants and animals taking place. It was interesting to see what

nature can do when left to its own devices. A walk down a dry streambed led through the older vegetation – mainly under taraire forest, with a large raupo swamp on the coastline at Te Warau Bay. The America's Cup race hardly delayed our ferry trip home.

March Meeting & AGM

This meeting was postponed due to Covid restrictions.

March Field Trip

Accessing Mahurangi East Regional Park has only been possible by boat in the past, but we were able to visit the newly-purchased extension to the park due to one of our members working for the Auckland Council and acquiring keys to the locked gates. We walked down a gravelled driveway and explored remnants of coastal forest and a wetland. A good find in the remnant forest was the bamboo grass, *Microlaena polynoda*, which only grows occasionally in the area, mostly on well-drained coastal slopes.

April Meeting & AGM

The rescheduled AGM resulted in Ewen Cameron continuing as our President. As our proposed student speaker was unable to attend, Bec Stanley, Curator at the Auckland Botanic Gardens, filled in with a thought provoking talk about the danger of pathogens being moved about by plant nurseries, as has happened overseas. At the Auckland Gardens staff have gone to great lengths over the last five years to ensure that their biosecurity procedures result in little risk from the plants propagated in their nursery and used in restoration projects.

April Field Trip

Te Arai, situated between Mangawhai and Pakiri, has gone through many changes over the years, including forestry, development and restoration works. We explored the dune systems sandwiched between the coast and the area being developed. The restoration work has aimed to imitate nature, with the main plantings being *Ficinia nodosa* and *Spinifex sericeus*. An unusual exotic, *Oenothera drummondii*, was common, and was sporting yellow flowers on the end of the prostrate stems. A few tiny turf plants were present in the wetter dune-slacks.

May Meeting

The meeting began with Geoff Davidson's mystery Plant of the Month illustrating a tall tree that he has noticed over the years growing in a suburban garden. Fortunately a couple of members could name it as a species of the Australian *Brachychiton* genus. He then proceeded to show pictures of the Anniversary Weekend camp at Taranaki, with Sandra Jones winning the prize for the best photo of goblin forest. Our Lucy Cranwell Scholarship recipient, Jarden Howard, outlined his studies for his MSc thesis on that hoary question, did the divaricating plant form develop as a result of harsh climates, or as a defence against moa browsing. Jarden backed the latter theory supported by measurement of the tensile strength of the branches and comparing the ploidy of the divaricating species and the non-divaricating twin species. He described the evolution of strong beaks and skulls in moa as being an arms' race with the increasing tensile strength of the branches of divaricators.

May Field Trip

Bec Stanley, formerly from the Auckland Botanic Gardens, led the party to four small reserves near the Gardens, outlining the history of the area. The rich volcanic soils of South Auckland support a vegetation quite unlike the more common kauri forest of the north of Auckland. The tallest of the trees were kahikatea (*Dacrydioides dacrycarpus*) and totara (*Podocarpus totara*) with the commonest broadleaf species underneath being karaka (*Corynocarpus laevigatus*), sprinkled liberally with young nikau (*Rhopalostylus sapida*). Ferns were uncommon with ponga (*Cyathea dealbata*) being the only tree fern noted.

Forthcoming Activities

20 June Trip	Cutty Grass Track, Waitakere Range.
7 July Meeting	Auckland street trees, Howell Davies.
18 July Trip	Lichen workshop, Unitech.
4 August Meeting	Plot monitoring, Dan Blanchon. Lichen species update, Marley Ford.
15 August Trip	Waikato Expressway Reserve with Waikato Bot Soc.

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■ Rotorua Botanical Society

May Trip - Utahina Walkway

We met near where the Utahina Stream passes under Malfroy Rd and explored its meandering course along a pathway that followed the western bank downstream to Old Taupo Rd. A narrow fringe of rough grass, blackberry or old trees ranging from willows, redwoods, wattles, and gums to old totara and cabbage trees enclosed the stream. The fringe was usually bounded to the west by lawns or occasionally houses. Near the start of our walk the stream bank had scattered areas, which had been used for garden rubbish and small patches of plants such as crocosmia, *Sellaginella kraussiana* and wandering Jew that had been washed downstream.

The stream bed had frequent masses of *Lagarosiphon major*, the odd *Glyceria maxima*, or large trout, numerous road cones and oddments such as tyres and drink bottles, especially near Malfroy Rd. *Diplazium australe* and *Deparia petersonii* were surprisingly common along the banks along with kiokio, mamaku, silver fern and ponga. Interesting native plants included scattered wineberry and at one point *Microlaena stipoides* in the lawn. Several large *Gunnera tinctoria* featured along the stream as well as patches of *Nandina domestica*. A group of large, old planted *Pinus muricata* and a small patch of *Ranunculus ficaria* with its large yellow flower also attracted attention. Then a patch of artichoke provided an opportunity to get tubers for dinner. The trip was brought to an abrupt stop during lunch when a phone call informed us that one of our vehicles had been broken into on a quiet side street near our start.

FUTURE EVENTS

June 13	Whakarewarewa wetlands
July 10	Western Matata dunes
August 1	Waimangu
September 5	Te Kopia Forest - Hancock Rd

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■ Whanganui Museum Botanical Group

For monthly meetings the Whanganui Botanical Group has merged with Birding Whanganui (local branch of OSNZ) and the Whanganui branch of Forest and Bird, under an umbrella name of 'Nature Talks'. Each group will arrange a speaker for about 4 meetings per year. Meetings will normally be on the 3rd Tuesday of each month. It is intended to continue with monthly botanical field trips to which members of the other two groups are invited.

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■ Wellington Botanical Society

For our summer camp to Banks Peninsula we stayed at Wainui YMCA, a staffed facility with three wings with bunkrooms for four people each and en suites, and a lawn nearby for campers.

14.1.21 Hinewai Reserve

What better way to start a botanical visit to Banks Peninsula than a visit to Hinewai. We were met by the effervescent Hugh Wilson, reserve manager (from the beginning, 33 years ago), botanist and all-round mine of information, and Paul Newport, currently the only other full-time worker.

On the way to the Visitor Centre we visited *Celmisia mackau* (At Risk – Naturally Uncommon), planted by what had been the Manager's house before the earthquakes. This was top of many people's 'plants we want to see' list. A Banks Peninsula endemic restricted to a 10 km² area, it ranges from sea level to the tops. It is a beautiful, lush-looking daisy with leaves 30–50 cm long and striking white flowers. We also admired a planted *Pittosporum obcordatum* (Threatened – Nationally Vulnerable). Until rediscovered by Melissa Hutchinson, this had been thought to have gone extinct on the peninsula for 170 years. And then there was a carefully delineated patch of the tiny *Leptinella nana* (Threatened – Nationally Endangered).

Hugh, Paul and other Hinewai helpers then took us on a walk traversing the top part of Hinewai. The route took us through many different forest types, including areas that 30 years ago had been grassy pasture and were now kānuka or mixed hardwood/podocarp forest, original red beech forest alive with the calls of pīpī and open areas with stunning views. As we went, Hugh shared more history and ecological insights: at the early stages of regeneration, kānuka and gorse came up together in pasture. One wins in one area, one in another. Kānuka forest eventually gets invaded by red beech; gorse by hardwoods and podocarps. The scrambling daisy, *Brachyglottis sciadophola* (At Risk – Declining) was another botanical highlight. We were at the wrong time of year to see it flowering, so make a note in your diaries to visit in late March.

To cap it all off, we walked along Brocherie's Road and down Long Bay Road to the Hinewai carpark, admiring the vegetation thriving on the roadside banks, much of it flowering splendidly: the snow tussock *Chionochloa rigida*, *Aciphylla aurea*, *Brachyglottis lagopus* and much more, carefully encouraged by Hugh and helpers through removing exotic invaders. At the Cabstand junction, Hugh took some of us down the road towards Akaroa to show us another Banks Peninsula endemic, *Heliohebe lavaudiana* (At Risk – Declining).

15.1.21 Waiwera/Lake Forsyth

Lake Forsyth is a stronghold for several species on Banks Peninsula, if not for the greater Christchurch area, including sea holly (*Eryngium vesiculosum*), the small sedge *Isolepis basilaris* and the small native musk (*Thyridia repens*). Jason Butt, Principal Biodiversity Advisor – Wetlands from ECAN joined us to give us an introduction to the area and provide local expertise and advice.

Unfortunately with the onset of a dry spell the lake was eutrophic and cyanobacteria posed a health risk and also caused an unpleasant smell probably added to by masses of macrophytes washed up and decomposing along the lakeshore. The button daisy/ *Leptinella dioica* was very common and varied in size from the more exposed areas to the plants growing in the shade and shelter of the rushes and grasses. *Lobelia perpusilla*, *Lilaeopsis novae zelandiae*, *Glossostigma elatinoides*, *Eryngium vesiculosum*, *Centipeda aotearoana* and the unnamed entity in the *Dichondra brevifolia* agg. were all in flower. The dichondra grows in the coarse gravel and appears to be summer green.

The boat launch area is one of the easiest places to see *Isolepis basilaris* with the taller species being absent. Behind and along from the clubroom there is extensive grassland and rush land with a smattering of shrubbery. A lot of the grasses are introduced *Austrostipa* and *Rytidosperma* species, but here and there the odd native grass can be found. The lakeside in front of the Christchurch City Council reserve towards the southern end of the lake is bounded by shrubbery comprising marsh ribbonwood / *Plagianthus divaricatus* and coprosma species. A long inlet was the practical boundary for botanising and those who ventured that far were rewarded with masses of *Ranunculus limosella* in flower. One interesting weed growing in the area was *Solanum nitidibaccatum*.

16.1.21 Okains Bay

Led by Melissa Hutchinson and joined by members of Canterbury BotSoc, we went to a bush remnant in Okains Bay. This was on private land and unfenced, so much of it had pasture underneath it except

where it was dense enough to shade the grass out, so there was not much recruitment of seedlings.

This was a fascinating remnant, however, with quite a number of species we didn't see anywhere else. Melissa knows what BotSocs are like—she took us across pasture as far as she could and didn't let us near any botany until we were most of the way to the far end. Then we botanised our way back. Pretty much the first thing we saw was *Pittosporum obcordatum*, which was recorded from Banks Peninsula when it was first explored but not since, until Melissa rediscovered it. We also saw *Olearia fimbriata*, *Lophomyrtus obcordata*, *Melicytus micranthus*, *Pseudopanax ferox*, a scary combination of *Urtica ferox* (which seemed to be everywhere we went all week) and *Rubus squarrosus*, plus a lot of *Coprosma virescens*, among others. There were two mistletoes, *Ileostylus micranthus* and *Korthalsella lindsayi*, and several climbers and scramblers including *Clematis afoliata*, *Scandia geniculata*, *Rubus squarrosus* and *Calystegia tuguriorum*. We worked our way down to the beach, where we saw *Wahlenbergia akaroa*, *Parietaria debilis* and hybrid *Disphyma*, and then back up along the edge of the bush, finding *Cheilanthes sieberi* and *C. distans* growing around rocks in the pasture.

16.1.21 Little Okains Bay

While most people went over to NW Okains Bay others chose to go to Little Okains Bay to see the historic karaka grove or 'Pa karaka', which is protected by a QE11 covenant. The rough 4-wheel drive clay track left the motor camp at the edge of Okains Bay and went up and over the spur to Little Okains Bay to the east. At Little Okains Bay, at the back of the beach *Salicornia australis* was in flower outside these caves. Jason Butt told us that climbing asparagus had once been found there too but we found none.

The plants were conspicuously weedy, with so much *Cotyledon orbiculata* / pig's ear in flower and *Vittadinia gracilis* / Australian fuzz weed in flower and seed. Predominantly grazed grassland with scattered shrubby native plants, there were however, some gems to be seen. Clumps of *Linum monogynum*, scrambling *Convolvulus verecundus*, *Clematis afoliata* in seed and *Rubus squarrosus* agg. with an unusual number of leaves as well as being in berry.

17.1.21 Oashore

Our morning visit was to Wairewa Conservation area - an area of open grassland dominated by exotic grasses and dotted with shrubby vegetation. The scattered rocks provided a little shelter for herbs like *Leptinella minor* and *Crassula colligata* subsp. *colligata* and the occasional patch of necklace fern / *Asplenium flabellatum*. We found a few bushes of *Muehlenbeckia astonii*. Two *Wahlenbergia* species were in flower. The one growing in the long grass had violet flowers and very wiry, much-branched flower stems. This turned out to be the Australian species, *W. stricta* subsp. *stricta*. The other, the local endemic, *W. akaroa*, grew in the shelter of shrubs. Its flowers emerged, supported by the vegetation. After lunch we walked down to the Tokoroa QE11 covenant, which was a remnant of mature forest in a gully kept moist by an ephemeral stream. Here there was a fine variety of mature trees and shrubs. The large trees were lowland tōtara, mataī, kōwhai / *Sophora microphylla* and *Hoheria angustifolia* - in full flower. The shrub layer was dominated by *Coprosma* species: *C. propinqua*, *C. virescens*, *C. rhamnoides*, *C. crassifolius*, *C. rotundifolius*, and *C. areolata*, a few of which had the pygmy mistletoe / *Korthalsella lindsayi* growing on them. There were several large *Olearia frangrantissima* around the margins. Some of the margin of the covenant was protected by large *Urtica ferox*. Because of the intact canopy, there was little light reaching the forest floor so herbs were largely absent.

18.1.21 Hauroko Covenant and Kaitorete Spit

Arriving mid-morning at Hauroko Covenant, Birdlings Flat, our group met Sophie Hartnell, volunteer coordinator for Banks Peninsula Conservation Trust ([https://www. bpct.org.nz](https://www.bpct.org.nz)). Hauroko Covenant lies 300 m from the ocean on the corner of Poranui Rd and Hillview Rd. It is fenced to exclude stock. The area is predominantly a sandy, stony pan with natural bunds the result of weathering. The task set for us was to weed through as much of the covenant as was possible before lunch. There were many weeds present though we focused on *Pittosporum crassifolium*, *Petroselinum crispum*, *Cotyledon orbiculata*, *Echium vulgare*, *Plantago lanceolata* and *Linaria purpurea*. Exciting native highlights included seeing *Carmichaelia appressa* and huge swathes and patches of *Muehlenbeckia ephedroides*. In the afternoon we followed Bayleys Rd off Poranui Rd to reach the DOC Kaitorete Spit Foreshore area. Kaitorete Spit separates Te Waihora / Lake Ellesmere from the sea. We were lucky

to see *Convolvulus waitaha*, *Carmichaelia apressa* and two large balls of *Pimelea prostrata* in the back-dune area. The impressive fore-dune system was covered in *Ficinia spiralis*. We also visited the nearby Waihora Scientific Reserve and were rewarded by seeing healthy *Muehlenbeckia astonii*.

19.1.21 Montgomery Park Scenic Reserve

We immediately found ourselves surrounded by more ferns than we had seen in the previous three days. *Asplenium gracillimum*, *A. flabellifolium*, *A. flaccidum*, *Asplenium* hybrids, *Blechnum fluviatile*, *B. discolor*, *B. nz*, *B. membranaceum* (?), *B. vulcanicum*, *B. chambersii*, *Dicksonia squarrosa*, *Microsorium pustulatum* subsp. *pustulatum*, *Notogrammitis* spp, *Polystichum vestitum*, *Pteridium esculentum* and more.

As we gained height, we noticed more epiphytes, including *Metrosideros diffusa* in flower, and *Griselinia lucida*. We also walked through a population of stinkhorn fungus *Aseroe rubra*. Then we had the impressive and steep rocky track to ascend the volcanic escarpment, with lots of well-placed stone steps. We started noticing the smaller plants, e.g., *Microtis unifolia*, *Corybas trilobus*, *Ourisia*, *Anaphalioides bellidioides*, *Astelia* (many in fruit), *Phlegmariurus varius*, *Lycopodium deuterodensum*.

20.1.21 Tutakakahikura Scenic Reserve

A most significant feature of the reserve is a stand of red beech (tawairaunui) forest, storm-damaged in 1975 but regenerating. We drove out to a high point above 600m on Flea Bay Road, where some of the cars were parked for the trip while 4WD cars continued to the lower entrance to the reserve, ready to help ferry people back up the road at the finish. A glance around this windy high point showed scattered clumps of *Kunzea ericoides*, *Podocarpus totara*, *Chionochloa conspicua*, a large flowering *Aciphylla aurea*, *Melicytus alpinus* common at this altitude. Further down the road, on the uphill bank were numerous *Polystichum vestitum*, *Asplenium appendiculatum*, *Corokia cotoneaster*, *Veronica* (*Hebe*) *strictissima*, among other species and occasional *Astelia fragrans*, *Brachyglottis lagopus*, *Ourisia macrophylla* subsp. *lactea*, and fruiting *Gaultheria depressa* var. *novae-zealandiae*. Below the other side of the road were large flowering *Carpodetus serratus* and *Fuchsia excorticata* trees, often cloaked with *Rubus cissoides*. Pest-control boxes were present at intervals.

What a lovely sight this section of the stream was, with an enormous abundance of *Blechnum colensoi*, *B. procerum* and *B. chambersii* draped down the sides of this little gorge. *B. fluviatile*, *Asplenium gracillimum* agg., *Polystichum vestitum* and *Leptopteris hymenophylloides* were also plentiful with the taller *Cyathea smithii*, *Dicksonia squarrosa*, *Fuchsia excorticata* and *Schefflera digitata* extending way above us. A little further on *Myrsine australis*, *Pseudowintera colorata*, *Pseudopanax arboreus*, *P. crassifolius* and other species provided a mid-storey in this lower section of the gully. A very healthy, localised, lush patch of flowering and fruiting *Ripogonum scandens* scaled a large tree and formed a dense leafy clump at track level. Down a bank we spotted about four stems of *Gastrodia molloyi*, two about 75 cm high and one still remaining in full flower.

Lower down the gully, a huge red beech standing behind a sign advising “400 years”, we estimated it had a d.b.h. of ca. 160 cm. Close by, on the stream banks below we saw three species of *Hymenophyllum*, four species of *Notogrammitis*, including the faintly hairy *N. ciliata* and *Schizeilema* (*Azorella*) *hookeri*.

On trunks of *Cyathea smithii* and *Dicksonia squarrosa*, we were pleased to see *Tmesipteris horomaka*, with distinctive tips on the leaves and good sporophylls. Also, *Trichomanes venosum* and *Rumohra adiantiformis* on an old ponga trunk. Some good eyes spotted the bright green foliage of a *Tupeia antarctica* perched well up a *Myrsine australis*

13 February 2021 Mt Climie, Remutaka Forest Park

We met at Tunnel Gully, Pakuratahi Forest, at 200m a.s.l. and took five 4WDs up the hill. Out of the windows we saw the transition from the regenerating lowland forest to silver beech forest and some *Cordyline indivisa* / mountain cabbage tree / tōt beside the road, before getting out into the open ridgetops. It didn't seem like a steep 4WD climb, but we had climbed 600 m. It was a short drive along the top of the ridge to the second radio tower (862 m) where we left the vehicles and continued on foot out along the spur to the east and through *Astelia nervosa* herb field, which was being colonised by kāmahi, *Dracophyllum* and others. Some highlights on the day included *Drosera binata*,

D. stenopetala, *Nertera ciliata* and *Gentianella montana* subsp. *ionostigma*.

The low vegetation is not naturally above the treeline. The original beech forest was razed by accidental fire in the early 20th century. A few people descended to the beech forest further down the spur. In damp undergrowth, *Pseudowintera colorata* dominated the understory, suggesting heavy browsing.

6 March 2021 – Queen Elizabeth Park, Maclean and Northern Peat Wetlands.

The plan for the day was to botanise the Maclean Wetland area first, and then if time permitted to botanise the paddocks further to the south. The base substrates of the area are degraded peats up to 8 metres deep bounded on the western side by an old and stable sand dune with a thin, weakly structured organic soil.

Entering the park at the Kāpiti Pony Club off Poplar Ave the area was notable for its selection of uncommon exotic species. We then proceeded to botanise the Maclean Wetland area that Greater Wellington Regional Council and the Maclean Trust have been restoring. The area comprises exotic grasses and herbs almost entirely, plus *Juncus* species and sedges in places. However, along the drains were mature mānuka and kānuka with an understory of more diverse native flora. Botanising along the drain was very limited due to the dangers involved. We then walked along the farm track down the dune to access the paddocks further south. These paddocks had not been grazed for some time and along with the Maclean Trust area the Regional Council intends to rewet and restore the peat wetlands in this area. In these we found areas that were quite wet and there were large areas of native plants coming up through the exotic herbs and grasses. These were often turfs of wetland species namely *Sphagnum* sp, *Isolepis prolifera*, *Centella uniflora*, *Gonocarpus micranthus* subsp. *micranthus*, *Hypericum pusillum*, and *Lobelia anceps*. In places the native rushes dominated with *Juncus australis*/wīwī/leafless rush, *J. edgariae*/wīwī/leafless rush, *J. pallidus*/wīwī/leafless rush, *J. planifolius*/grass leaved rush, and *J. sarophorus*. However, the paddocks were in the main dominated by gorse and exotic wetland grasses and rushes namely, *Agrostis stolonifera*/creeping bent, *Paspalum distichum*/mercer grass, *J. articulatus*/jointed rush, *J. bufonius* var. *bufonius*/toad rush, and *J. dichotomus*/forked rush.

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■ Nelson Botanical Society

December: Castle Hill Camp

Stop 1: Craigieburn Skifield

Above the carpark on a shaded bank, *Ourisia caespitosa* was putting on a lovely display, *Ranunculus ensysii* had rosettes of pinnate leaves and flowers on long stalks, and *Geum uniflorum* with their single flowers were also noted. Several *Celmisia* species were present including *C. verbascifolia*. Hidden in the leaf litter of *Fuscospora solandri*, we spotted *Corybas vitreus*. We identified *Hebe pinguifolia* with its red leaf margins and *Olearia cymbifolia*. The shrubs with thick leathery rounded leaves were *Olearia rotundifolia* var. *rotundifolia* and *Brachyglottis bidwillii*. We admired *Raoulia grandiflora*, *Anisotome pilifera*, bright-green cushions of *Phyllachne*

Aporostylis bifolia Photo by Don Pittham



colensoi, *Pimelea oreophila* ssp. *oreophila* trailing through the tussock, *Celmisia laricifolia* and *C. lyallii*. Two whipcord hebes were flowering, *Hebe lycopodioides* and *Leonohebe tetrasticha*. Near a creek we found *Dolichoglottis scorzoneroideis*, large shrubs of *Brachyglottis cassinioides* and *Aciphylla scott-thomsonii*.

Stop 2: Dry Stream

We made a quick stop here to check out the scree pea, *Montigena novae-zelandiae* and found another scree plant, *Montia erythrophylla*, flowering as well.

Stop 3: Porters Pass

On the west side of Porters Pass we found *Pterostylis tristis* and *P. tanypoda* in flower. Also flowering in this lovely spot were *Carmichaelia monroi*, *Bulbinella angustifolia* and *Geranium brevicale*.

Day 2: Otira Valley

We made our way up the valley track, where the orchids included *Waireia stenopetala*, *Aporostylis bifolia*, and patches of *Pterostylis oliveri*. A subalpine shrubland featured *Lepidothamnus laxifolius*, *Dracophyllum longifolium*, *Pseudopanax colensoi*, and *Coprosma serrulata* and the occasional *Forstera purpurea*. Crossing the Otira River there appears to be a zone where *Dolichoglottis lyallii* gives way to *D. scorzoneroideis*, with hybrids. Here the Otira is a mere brook trickling through a herbfield featuring *Leptinella pyrethrifolia*, *Ranunculus lyallii* and *Dolichoglottis scorzoneroideis*, dotted with *Hebe*, *Astelia*, *Aciphylla* and *Anisotome*.

March Camp: Banks Peninsula

Day 1 Hinewai



From the gorse-covered hills, Hugh, with his Trust and his helpers, have shown what is possible in creating native bush in half a lifetime. Using the gorse as a nursery plant, the hills are now covered with regenerating broadleaf scrub – mainly five-finger, māhoe and kānuka with young red beech. We followed the track through an area planted with Banks Peninsula endemics and were wowed by *Celmisia mackau* and *Brachyglottis lagopus* leaves and flowers. The Banks Peninsula endemic, *Hebe strictissima* was also in flower. By the visitor centre, plantings of some rare plants, like *Pittosporum obcordatum*, are thriving. We headed uphill to the adjoining Purple Peak Curry Reserve and climbed up towards a rocky place where, on an exposed face we saw *Chionochloa rigida* and the little fern *Notogrammitis crassior* growing in a crack of a rock. *Anaphalioides bellidioides*, *Viola cunninghamii* and *Ophioglossum coriaceum* were found in the short grass. Back in the forest, we came across patches of *Brachyglottis sciadophila*.

Day 2, Ōnuku Farm and Palm Gully Scenic Reserve

Our first place of interest was a gully, with

Pterostylis oliveri Photo by Don Pittham

Acaena juvenca and *A. anserinifolia*. The presence of *Polystichum oculatum*, with its distinctive wide brown scales, set the ball rolling. One of the exciting finds was *Scandia geniculata* and of interest were the small forests of ribbonwood. It was nice to encounter these and a number of other tree species displaying both juvenile and adult foliage, for instance *Sophora microphylla* and *Pennantia corymbosa*. These also proved to be hosts for *Calystegia tuguriorum*, *Parsonsia capsularis* var. *rosea*, *Muehlenbeckia* and a couple of mistletoes. A highlight was seeing a large rambling specimen of *Rubus squarrosus*, for others it was the discovery of *Teucrium parvifolium*, as well as *Carex silvestris*.

February Field trip: Mt Campbell

We met at the Alexander Bluff Reserve drove up in four-wheel drive vehicles and arrived at the summit to beautiful sunshine. The alpine area on Mt Campbell is quite compact. *Coprosma fowerakeri* was quite conspicuous, as was *C. depressa* with smaller rounder leaves. Among these larger shrubs were patches of *Pimelea mesoa* and *P. prostrata*, *Geranium* aff. *microphyllum* and *G. brevicaulis* and the occasional *Olearia nummulariifolia*. Juicy-looking berries appeared on *Gaultheria depressa* var. *novae zelandiae* and *Leucopogon fraseri*. We moved further down the hill to the bush margins, where groups of large shrubs such as *Olearia lacunosa* and *Hebe topiaria* were present, interspersed with the blue-tinged foliage of *Aciphylla glaucescens* and splashes of bright pink leaves on *Pseudowintera colorata*.

March Field Trip: Emerald Pools track, Pelorus

Our group drove to the start of the Emerald Pools track, which goes through a forest of red, silver and black beech with a broadleaf subcanopy and emergent podocarps *Prumnopitys ferruginea* and *P. taxifolia*. Both *Podocarpus laetus* and *P. totara* were present, and we also identified *Elaeocarpus dentatus* and *E. hookerianus*. Among the smaller shrubs we noted several plants of *Raukawa anomala*, including one with small white fruits. *Lophomyrtus bullata* and *L. obcordata* were present and small-leaved coprosmas were represented by *C. rhamnoides*, *C. propinqua*, and *C. dumosa*. *Hymenophyllum demissum*, *H. multifidum*, *H. revolutum*, *H. scabrum* and *H. rarum* and several specimens of *Notogrammitis heterophylla* were noted. The North Marlborough endemic *Hebe rigidula* var. *rigidula* was present mainly in the riverbed. We also found a single group of *Poranthera microphylla*, an uncommon plant, with oval leaves and small white flowers.

May Field Trip: Moa Park

We met at the Harwoods Hole carpark and managed to make good time to Wainui Saddle for morning-tea. We went through forest of silver beech with scattered kaikawaka, Hall's tōtara and occasional *Dracophyllum elegantissimum*. A number of old kaikawaka stumps were covered in the greyish fronds of *Hymenophyllum malingii*. The more interesting finds along the way to Moa Park were the ferns *Hypolepis rufobarbata* and *Notogrammitis pseudociliata*. Patches of a *Gaultheria* with bright red fruit and bronze-coloured leaves looked like tall *G. macrostigma* and were probably a hybrid with *G. antipoda*. We found a patch of *Gaultheria depressa* var. *depressa*, with its long hairs around the leaf edges. We had a quick look around Moa Park a large natural clearing on granite sand. There is a mix of *Chionochloa rubra* and open shrubland with a number of normally alpine species. *Drosera spatulata* formed small, bright red patches and there were very small plants of the uncommon *Juncus pusillus* nearby. Another interesting record was identified as *Veronica hectorii* subsp. *coarctata* x *V. odora*. On a rocky face near the carpark there were several plants not seen elsewhere during the day, including *Myosotis forsteri* and *Asplenium trichomanes*.

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■ **Canterbury Botanical Society**

The Canterbury Botanical Society AGM is on June the 12th. Despite some Covid restrictions the CBS managed to fit in 10 meetings and 11 field trips as well as a spring camp near Timaru over the past financial year.

Recent talks were the March presentation on Banks Island (Banks Peninsula) vegetation by Melissa Hutchison. Though small in area it has a number of ecological areas ranging from sub alpine to

subtropical and dry stony soils to wetlands. The variety of plant species reflects these habitats.

In April Ellery Mayens gave a talk on the diverse flora of California and on Tejon Ranch flora. Two indigenous species *Hesperocyparis macrocarpa* (Monterey Cypress) and *Pinus radiata* are rare in California. Tejon Ranch conservancy has since the 1840s has been in private ownership.

In May Melissa Hutchison was again in front giving us a talk on her favourite topic, the lichens of Banks Peninsula. While not many of us remembered the long lichen names she illustrated the different forms species have: crustose, foliose and fruticose. They can be identified by their colour, host or form. Her talk was followed by another excellent presentation by David Glenny on mosses and liverworts found in Banks Peninsula.

Mt Ararat in North Canterbury was the location of the May field trip. This uplifted rock outcrop is formed by silica sands. These silica sands have some moisture retaining properties as on the eastern side is a fairly healthy stand of native bush including a number of rata trees. These rata trees situated so far north and close to the coast are unusually distant from other rata populations. The small reserve is surrounded by mature pine forest. Many of the wilding pines in the reserve had been felled on previous visits by Bot Soc members. The rotting wood provided habitat for a number of lichens, two of which were the eye catching red tops of two species of *Cladonia*, British Soldiers and Pixie Cups. The recent Canterbury dry conditions proved too much for many of the mosses.

Coming up is the AGM on June 12th and a field trip to Wai-ora native plant nursery in July.

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BIOGRAPHY / BIBLIOGRAPHY

- **Philip Caldwell Gardner (1928–2000):** alpinist, rose grower, virologist and plant collector.

Rhys Gardner, rhysogardner@hotmail.com

Philip "Phil" Gardner (of the Horowhenua clan of this name and not related to the writer) has been remembered in several short articles (Anon 1992; Asquith 2000; Park 2001; Knight 2008), which

together have provided the biographical basis for the present one.

Phil grew up in Levin. In the early 1950s, after some undergraduate study (as a Forest Service cadet?) he took over the family farm, and "liking plants more than cows" began to turn it into a nursery. By 1967 his 'Avenue Nurseries' catalogue offered roses only. He and his wife Georgie worked towards improving the health of roses being offered for sale in this country, and Phil was eventually able to complete two related degrees from Massey University: an M.Sc. in 1972 on rose-grafting and a Ph.D in 1983 on rose viruses (Note 1).

In 1951 Phil and three other friends in the Tararua Tramping Club had the idea of making an expedition to the mountains of Nepal, near the Tibetan border (Roberts et al. 1954). The Chinese had by this time overrun Tibet and permission might not have been granted by the Nepalese except for Phil's enterprise in getting the British Museum to support their trip as a plant-collecting one. The four young but well-organized New Zealanders and their bales of gear reached the Nepalese capital of Kathmandu in April 1953. They stayed in the mountains until late July, when Phil went off by himself to collect in the lowlands (Roberts et al. 2004: 46; Note 2).

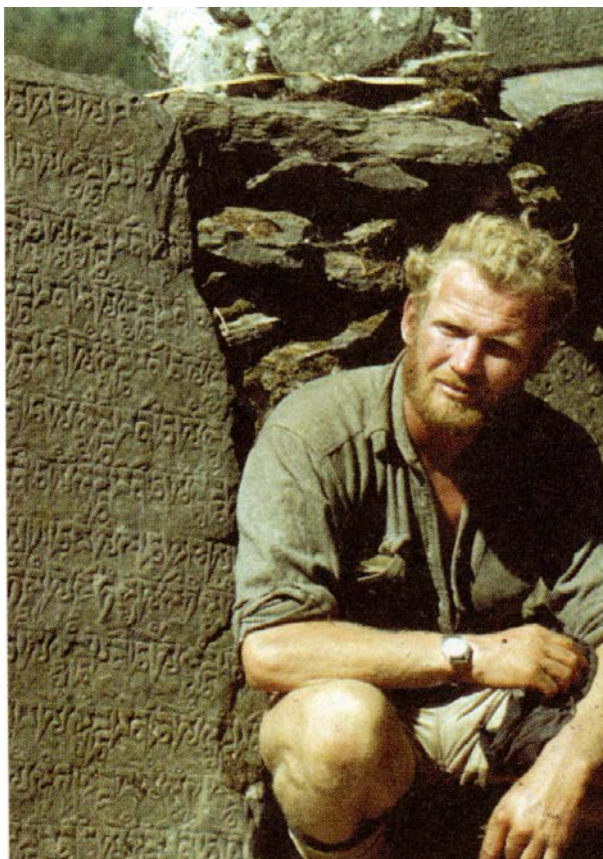


Fig. 1 Phil Gardner in Nepal, by a *mani* stone. From p. 61 of the 2004 reprint of Roberts *et al.* (1954), courtesy of Steele Roberts Publishers.

The wisdom of spending several weeks reconnoitring and adapting to higher altitude was realised on June 6 & 7, when three of the four members of the party and their two sherpas successively reached (without oxygen) the 7165 m summit of Chamar North. Remarkably, subsequent attempts on this mountain, the highest point of the Shringi Range and a relatively short distance from Kathmandu, have all failed.

They returned to New Zealand in late August/September (later followed by a fifth companion, a young Himalayan brown bear called Baloo, who was to spend the rest of his life at Wellington Zoo). They were given civic and governmental receptions but their achievement had been overshadowed by the conquering of Everest and Queen Elizabeth II's Coronation, and they were soon the "forgotten climbers" (Maclean 1994; Ferguson 2013; Barnett & Maclean 2019). The next year however they co-authored a slender book on their expedition (Roberts 1954), with some colourful observations on the Nepalese way of life, a little about plants, and some short, hazard-minimizing descriptions of their climbs.

Phil and Georgie carried on successfully at Avenue Nurseries for several decades, then handed over the secateurs to their son Willie. For several years in the '90s they led a campervan-gypsy life, touring New Zealand and observing and collecting plants (Gardner 1995, 1999; Note 3).

In addition the couple made a winter-avoiding trip in 1996 to the Cook Islands. They collected on Rarotonga (where Phil was able to reactivate a fourth-form interest in ferns) and also on the less well-known islands of Ma'uke and Mangaia. The usefulness of Phil's work here was acknowledged by Bill Sykes (2016: 15). Phil's several hundred Cooks specimens are in AK and CHR (Note 4).

Phil's adventurous attitude finds an echo in the last [slightly altered] lines of the introduction to *Himalayan Holiday*:

Note 1 In my postgraduate years I often envied older research students like Phil. They already knew the quirks of their experimental material and were little troubled by practical problems that would have taken me months to solve. And their curiosity seldom extended to aspects of student life unrelated to scientific progress.

in homemade spirits Phil seems not to have known of the alcohol collecting-method.

Note 4 Not all herbarium databases provide the naïve user with a satisfactory experience. A search in one for "P. Gardner" specimens brought no result— his surname had been entered "Gardiner". A search of another produced tens of thousands of records, only the first three of which were relevant. (Happily though one was of the holotype of a native acanthodriline worm that Phil had collected from the Tauherenikau Valley in 1948). Least said is best about searching in a third database. That is, some tedious use of 'fields' is necessary to bring up just what one wants and not nearly everything else or nothing at all. Anyone wanting to set up a new herbarium database is recommended to look at that of US, the Botany Department of the Smithsonian Institution, <https://collections.nmnh.si.edu/search/botany/>.

Acknowledgments

I am grateful to Ewen Cameron (AK), Mark Carine (BM) and Ines Schonberger (CHR) for information about Phil's specimens.



Fig. 2 Specimen (BM) collected by Phil Gardner in Nepal, 1953. Image reproduced under a CC-BY 4 licence, ©The Trustees of the Natural History Museum, London.

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■ Biographical Sketch – Joshua Salter (1946-)

Val Smith, 80 Mill Road, New Plymouth 4310.



Joshua Salter

In 2005 Peter de Lange asked Joshua Salter to do the botanical drawings for his PhD thesis on *Kunzea*. Her illustrations of the ten *Kunzea* entities he recognised included a species found only on Whale Island in the Bay of Plenty. He named it *Kunzea salterae* in her honour (de Lange 2014).

Joshua was born Mary Lynn Dallas in Hobart, Tasmania, on 12 August 1946, the daughter of Ken Dallas, professor of economic history at Hobart University, and Invercargill-born sculptor Alison Duff. The families of both parents were farmers, mainly of Scottish origin, with some convict ancestry (via Norfolk Island) on her paternal mother's side. Her parents never married, and when they separated in 1948 her mother returned to Sydney as a solo mother and taught sculpture and art until she had enough funds to return to her family at Northcote, Auckland.

In New Zealand Joshua changed schools nine times, and except for the year that she lived with her South Island grandparents on their small farm near Christchurch (1953), and her fourth form year at a Gisborne boarding school (1960), she progressed through the Northcote primary, intermediate

and secondary schools and completed her fifth and sixth form (University Entrance) years at Westlake Girls High School. From about the age of eight, when her mother married Len Salter, a builder, she was enrolled as Mary Salter, and only later, when arrangements were made to change her name by deed poll, did she learn that her earlier name was not Laird, but Dallas. (Her mother, previously married to Norman Laird and still officially Mrs Laird, had first enrolled her daughter as Mary Laird to avoid her being harassed because of her different surname – and forgot to tell her! Later, in 1970, when a pregnant flatmate in Melbourne pondered the question of a name for her baby, "Joshua" was suggested as an agreeable name for either sex, and in due course they became Josh 1 (Joshua Salter, who had never liked being a Mary) and Josh 2 in the household.

After leaving school at 16, Josh went to the newly established Auckland Teachers' Training College – but disliked it and got out before becoming trapped by the bond system! Then, after various jobs, including stints of teleprinting and operating the pneumatic messaging tubes at the General Post Office, she enrolled at Auckland University for evening lectures in English (1965) and Psychology (1966) but dropped out, having done no work and failed exams both years. At the same time she worked at the Valuation Department, updating land titles and property boundary plans (her first 'draughting' job), was then employed as a tracer for an architectural firm, and later did typesetting, layout and touching up plates for a small offset printing business. After signing up briefly as a job seeker, she did typesetting and layout work for another large offset printing firm in Penrose and saved enough to travel to Tasmania in 1968 and meet her father in Hobart. There, and later in Melbourne (1968–1971), she worked as a draughtswoman in a structural engineering firm, had a taste of art school, and back in Auckland continued what would become some thirty years as a draughtswoman, learning on the job and becoming an engineering detailer.

Her skills enabled her to do well paid contract draughting during the fourteen years she lived in London (1977–1991). In 1980 she made a two-month Greyhound bus tour of the USA, and back in London began a BSc with the Open University in 1983. However, realising it would take eight years to do it that way, she enrolled fulltime at Kings College London, leaning towards the botanical subjects (at intermediate school the tiny pea flowers of clover had blown her away!) Knowing she would eventually return to New Zealand, she chose final projects with a New Zealand focus, and graduated in 1988 with a BSc (Hons) and the Carter Medal for presentation. Engineering draughting enabled her to save again; in 1990 she married her partner of five years Bill Kirby and the next year they left for New Zealand, detouring en route to climb Mt Kinabalu in Borneo.

Back in Auckland, and unable to get work as a botanist with a mere BSc (Hons), Josh did more draughting work and in 1994 enrolled at Auckland as a PhD student, supervised by Dr John Braggins and Dr Brian Murray. Ten years later her two-volume thesis *Comparative Morphological, Anatomical and Embryological Studies of Prumnopitys taxifolia and P. ferruginea (Podocarpaceae), and the hydrodynamics of their saccate pollen grains* was completed. During this time she also tagged along when Dr Braggins and his bryology students (Matt von Konrat, and later Matt Renner) attended bryology workshops.

Although a botanical career still eluded her, Joshua's skills in the techniques of histology (the study of microscopic structures of tissues) proved useful, first at Auckland University for making animal histology slides for teaching,



Kunzea salterae

and then for a post-doctoral fellowship position at Southern Illinois University, Carbondale, where she worked for 18 months (June 2008–December 2009) sectioning the apical cells of various liverworts for Dr Barbara Crandall-Stotler. During this work she noticed unusual shoot morphology in a rare New Zealand liverwort, *Herzogianthus*, which led eventually to a co-authored paper (Renner & Salter 2020). In Illinois she joined the Shawnee Chapter of the Southern Illinois Audubon Society and was introduced to the wilds and shown special places where native rock art is preserved. She also joined the American Botanical Society and has attended several of its annual conferences.

On her return from the USA Josh resumed life in Auckland and in 2011 became eligible for national superannuation, heaved a sigh of relief and accepted gratefully her unemployability. Since then she has been part-editor of the Auckland Botanical Society Journal, and done intermittent work on *Herzogianthus* research (mentioned above) and preparing her 2004 thesis for publication. As well as botanical society meetings and field trips, she enjoys bush and coastal walks with her husband and friends, and attends most John Child Bryophyte Workshops; she seldom has time for serious reading, but enjoys movies, especially during the Auckland Film Festival.

Travelling to the UK is an occasional indulgence, mostly for the art and architecture of earlier eras, and for the pleasures of English gardens and country walks. After the death of her stepfather (1996) and mother (2000), Bill and Joshua moved to 23 Orewa Road, Northcote, where they currently live.

Kunzea salterae

Kunzea salterae, in the family Myrtaceae, is a kānuka currently known only from Moutohora (Whale Island) off the eastern Bay of Plenty coast, where it is widespread and sometimes the dominant woody shrub or tree of the coastal forest, geothermal field, cobble beach and sand dune vegetation. The typically multi-trunked growth habit, consistently narrow linear-lanceolate leaves and abundance of short, divergent branchlet hairs distinguish it from *K. robusta*, which is the less common of the two species on Moutohora. The genus is named after German botanist Gustav Kunze (1793-1851); 'salterae' refers to Auckland botanical illustrator and conifer embryologist Josh Salter.

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PUBLICATIONS

■ Publications Received

Canterbury Botanical Society Newsletter April 2021: Upcoming meetings and trips, trip report for Grey River Picnic Area, Don Bell obituary.

Canterbury Botanical Society Newsletter May 2021: Upcoming meetings and trips, upcoming conferences and workshops.

Nelson Botanical Society Newsletter March 2021: Upcoming meetings and trips, trip report for Waitangi weekend trip to Banks Peninsula.

Nelson Botanical Society Newsletter April 2021: Upcoming meetings and trips, welcome to new members, trip reports for Mt Campbell, Tasman and Emerald Pools Track, Pelorus.

Nelson Botanical Society Newsletter May 2021: Upcoming meetings and trips, trip report for Moa Park and talk report for Jack Hobbs' talk.

The New Zealand Native Orchid Journal May 2021: The Greyney's *Pterostylis*, the Deep South – Auckland and Campbell Is orchids, *Thelymitra* aff. *longifolia* in the Far North.

Wellington Botanical Society Newsletter April 2021: Upcoming meetings and trips, submissions made, grants available, myrtle rust in Karori Sanctuary/Zealandia, Greater Wellington Regional Council pest-animal control, Colin James Ryder Obituary, Percy Scenic Reserve news, Bronwen Shepherd honoured, trip reports for Banks Peninsula summer camp including lichen highlights, Mt Climie, Queen Elizabeth Park, Maclean and Northern Peat wetlands.