TRILEPIDEA

Newsletter of the New Zealand Plant Conservation Network

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Deadline for next issue: Thursday 15 September 2016

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

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NEW ZEALAND

PLANT OF THE MONTH, p. 2

Clematis afoliata

Aequi iniqui Henry E. Connor CNZM, MSc(Hons), DSc, FRSNZ – Man of Science (4 August 1922 – 26 July 2016)

P.J. de Lange, NZPCN Council member (pdelange@doc.govt.nz)

On my book shelf, I have a copy of Edgar and Connor (2010), the second edition of the 'Flora of New Zealand Vol. V. Grasses'. Inside is inscribed in black ball-point pen in Dr Elizabeth Edgar's hand 'with our thanks and best wishes' followed by her signature and, tellingly, in blue ink, Dr Henry Connor's distinctive script (Fig. 1A, B). In my filing cabinet is an accompanying letter to that volume written by Henry which states 'treasure this book we will not produce another like it' followed by '*Tu es amicus gramina*' (you are a friend to grasses).

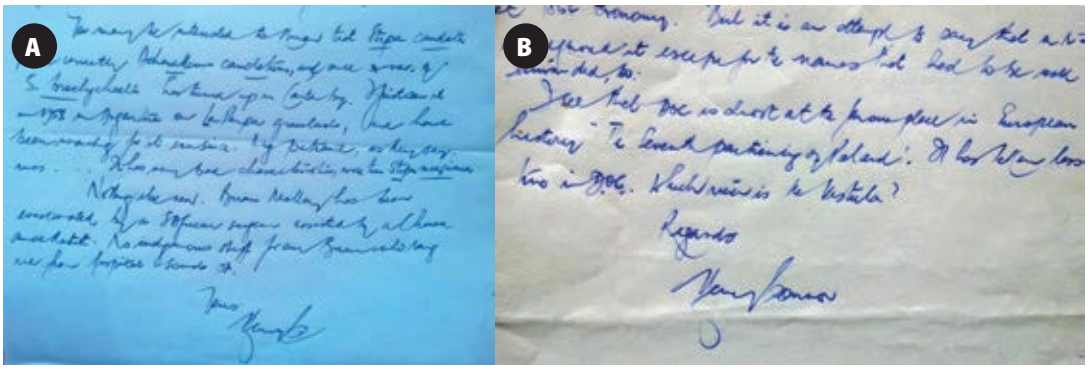

Fig. 1A,B. Examples of Henry Connor's distinctive handwriting showing (A) his abbreviated and (B) his usual signature

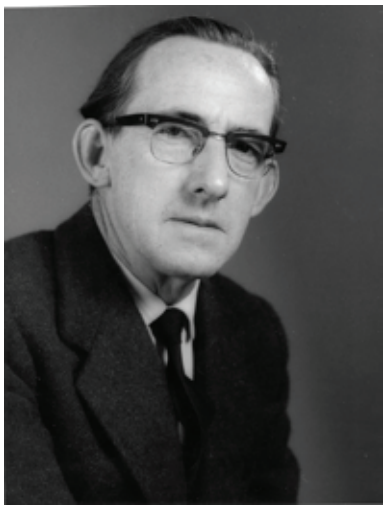

Fig. 2. Henry Connor

Henry Connor (Fig. 2, 3) passed away on 26 July 2016 after some two years of debilitating illnesses, and just nine days before his 94 birthday. With his passing, New Zealand lost one of its leading authorities on New Zealand grasses, a world-renowned expert on grass reproductive biology and genetics, our poisonous plants, and a formidable man of science. Henry was born in Wellington in August 1922 and attended St Patrick's College where he developed a deep respect for 'scholarship' (as in studious study). From St Patrick's, he went on to study science at the then Victoria University College, taking his Bachelor of Science in 1948 and Master of Science (First Class Honours) in 1950. He was awarded a D.Sc. from the University of Canterbury in 1978 and an FRSNZ from the New Zealand Royal Society in 1983. In 2000, he and long-time collaborator, Dr Elizabeth Edgar, were awarded the Hutton Medal of the Royal Society of New Zealand for their contributions to the documentation and botanical classification of New Zealand flora. Two years later, Henry was appointed a Companion of the New Zealand Order of Merit for services to botany.

PLANT OF THE MONTH – *CLEMATIS AFOLIATA*

Clematis afoliata. Photo: Jeremy Rolfe.

Plant of the month for August is *Clematis afoliata*. This interesting plant often grows to form large bundles with an appearance like a large tangled wire or thick string. Its leaves are severely reduced to petioles earning it the common name of leafless clematis. The stems are up to 3 m long and are stiff, wiry and grooved. Small green-white flowers appear during October and November.

It is found in both North and South Islands, often found in open rocky shrublands and, in South Island, also in tussock grasslands. *Clematis afoliata* is not threatened although in some regions the open rocky habitats are subject to development pressure. Competition from naturalised plants also poses a threat to regeneration of this plant in some areas. You can read more about *Clematis afoliata* on the NZPCN factsheet at: http://www.nzpcn.org.nz/flora_details.aspx?ID=1679

Henry began his botanical career in 1940 with the then Department of Scientific and Industrial Research (DSIR) Botany Division where he initially worked with Victor D. Zotov (1908–1977) under Director Dr Harry H. Allan (1882–1957)—destined to be the author of the first volume of the DSIR Flora of New Zealand series. It was during those early years of employment that he completed his B.Sc. and M.Sc.(Hons.) and began in earnest to work with grasses and grasslands, as well as keeping a dossier on, then critically investigating, and finally publishing on poisonous plants. Henry's interest in grasses was initially ecological but soon turned to their reproductive biology, a study which gathered impetus when he made the discovery of gynodioecy in some of our indigenous species. Following that discovery, Henry undertook exhaustive studies on not only grass gender dimorphism but also their chemistry, genetics and eventually their taxonomy. It was in these fields that he became an internationally recognised expert. Toward the end of his career with DSIR, in 1980, he became Director of the Botany Division, a position he held until his retirement in 1982. When he retired from the Botany Division, he was made an Honorary Fellow of the Centre for Resource Management, University of Canterbury, a position later carried over to the School of Geography. During his long career, Henry published in excess of 160 papers in peer-reviewed literature (at least half of these when 'retired'), and eight books including, with Dr Elizabeth Edgar, two editions of the New Zealand Grass Flora (Edgar & Connor 2000, 2010). He also advised on the preparation of Flora IV (Webb et al., 1988). Henry was a brilliant academic but also a very complex person. I provide here an account

Fig. 3. Henry Connor posing with a specimen of *Austroderia* (*Cortaderia*). Henry started his career with detailed studies of the gender-expression of grasses, their genetics and chemistry. In the process he recognised a number of new species, including in *Austroderia* (as *Cortaderia*), *A. splendens* (named by Henry in 1971) and *A. turbaria* (named by Henry in 1987)

based on my experiences of working with the scientist side of Henry. I know little of his family life, indeed over the 20 years in which I knew Henry he scarcely mentioned his personal life. For Henry, when dealing with scientists and sciences matters, other parts of his life had little relevance, though he certainly appreciated scientific gossip and being, it would seem, very well connected, always seemed to know (sometimes before you) what was going on in the wider science world, or indeed in your own sphere of influence.

My induction with Henry began indirectly when at Christmas 1977 I was presented with a copy of '*The Poisonous Plants of New Zealand*' (Connor 1977)—the revised second edition of Henry's landmark publication. Although awfully technical for an 11-year-old, I did struggle through it and whilst often mystified by the chemistry used it to learn the plants I should not be consuming whilst out and about (I suspect that was my mother's intent).

Over time, I came to know Henry by his many taxonomic publications, most notably his *Rytidosperma* revision with Elizabeth Edgar (Connor & Edgar, 1979). However, when I made my first visit to the former DSIR Botany Division in September 1983 I missed meeting Henry Connor—it was to Elizabeth Edgar that I addressed (precocious youth that I was) 'When will the grass flora be published?' I can only imagine what Henry would have said to me had I asked the same of him.

From others, I gradually learned of Henry's unique mannerisms and during my visits to DSIR Land Resources, after commencing work for the Department of Conservation, I was always carefully steered away from Henry by well-intentioned staff. Henry was viewed by many as a 'fire brand', dismissive of conservationists and unafraid to share his views. Indeed, others I know have said that he was both a 'friend and foe'—hence the title of this obituary. Henry worked in a world where he took no prisoners, he admired hard-work, excellence in science and science writing, and he automatically expected contemporaries to have the same knowledge of the classics, languages, religion and dry wit as he did. Henry liked to shock. He certainly had no time for 'time wasters' and he remained firmly dismissive of 'checklist writers', 'field surveyors' and 'tag name artists' (some of his politer terms). I gather that he initially thought I was one of those 'sort of people' which was why I was kept out of his way.

This all changed when, in 1996, I found an exotic needle-grass that I could not identify. I lodged the main collection in the herbarium of the Auckland Museum and, as was then my working style when dealing with grasses, I sent a duplicate to Elizabeth Edgar. The grass I told her might be *Stipa tenacissima*. Enigmatically, I received a letter from Elizabeth telling me that 'Henry had taken the grass and that he had said it was not *Stipa tenacissima* but another one'. As nothing was forthcoming from Henry, after several months I mentioned this to Dr Rhys Gardner, who looked at my Auckland specimen and identified it as *Stipa tenuissima* (now *Nassella tenuissima*). As the grass was undeniably 'weedy' and actively spreading, Rhys promptly wrote an article about it with Paul Champion and me as third author (Gardner et al., 1996). That action prompted my first ever direct interaction with Henry.

It started with a letter that I received at work. This, written in blue ink in a strange, scarcely legible scratchy handwriting (Fig. 1) was addressed to 'Mr Peter J. de Lange Esq'. The contents when finally deciphered were spectacularly abusive. It may strike people as odd that I would dare to say this but bear with me—this was Henry's *modus operandi*. Luckily, I had long ago been advised by Anthony Wright (former curator of Botany, Auckland Museum Herbarium) on how to respond to Henry's letter—you see this was Henry's 'challenge' and apparently you were expected to show your 'mettle' and so I did. Henry, it transpired, was aggrieved that I (really 'we') had written the article; in his world he knew what the grass was, and so why did I (really 'we') write the article? To him, the fact that he had determined the species of grass meant that the article we had written was now unnecessary—he seemed mystified that we would actually want to know what the species of grass was. My response was careful. I wrote that the article was written by three people not one and that we three were concerned about the spread of this weedy species, that we had noted it had not yet been brought to the appropriate people's attention as a potentially serious weed and so were acting out of a sense of responsibility.

Further, I bluntly observed that if Henry knew what it was then why on earth didn't he 'deign' to tell us and/or publish the fact it was such a bad weed?

Henry never replied to the contents of that letter; rather we entered phase two of Henry's 'trials'—but here again I had been warned. This 'second trial' started innocently enough with a 'Royal Summons' to attend him at his new place of abode at the School of Geography, University of Canterbury. This I did when I was down lecturing at the School of Forestry.

I admit I went to his office with some trepidation steeling myself for a verbal fight. Instead, I was greeted warmly with his characteristic loud bellow of "*Connor here*!" when I knocked at his office door. Inside, I found Henry sitting benignly behind his desk, beaming from ear-to-ear. On his desk stood a large bottle of single malt, the label carefully hidden by a large, off-yellow bow-tie, placed next to this was a massive conical flask full of distilled water, and two ornate lead-crystal glasses. I was asked to sit, whereupon Henry causally splashed out three fingers or so of neat scotch into the glasses, and uttering "*Bibe*!" tossed his drink back. Realising what was required I did the same. As I did so, I noted Henry carefully watching for my reaction. "One of Islay's, I think" said I, "*Bravo amicus*!" said Henry. So I passed the initial part of the trial. The rest required spending a protracted afternoon drinking neat scotch ("watering it down is for philistines" said Henry) discussing grass taxonomy, politics, science, botany and I confess indulging in a little character assassination. All the time one was acutely aware that what you said and did was being critically assessed, weighed and that each question back to you was skilfully targeted, whether to test your intellect, throw you off balance, or do both. Only when the bottle was virtually empty was I abruptly dismissed. As I staggered down the stairs I blearily wondered what it all meant. Still, the fact that thereafter each visit to the university was punctuated by a 'Royal Summons' meant I had passed those tests as well. Nevertheless, with Henry one could never rest easy—you were always being assessed. Henry, I soon learned, liked someone who stood up for himself (and his drink). He spurned what he saw as weak people. Indeed, I well recollect one colleague referring to Henry as 'Connor the Barbarian' for his way in dealing with people. It's true Henry could be, and he often was, as ruthless as he was generous. He did not suffer fools gladly. So I guess I am honoured that he didn't consider me a fool (at least that I was aware of).

Having apparently passed muster by 'trial of scotch', I was soon flooded with correspondence—mostly on grass matters. Henry's handwriting, I have already alluded to but seeing is believing (Fig. 1). Henry loathed the computer and maintained that writing was an art and one that should be indulged in only by writing with a fountain pen using blue *not* black ink. (Only once did he ever write to me with a ball-point and that was after the February 2011 Christchurch earthquake during which it seems he had lost his special gold-plated fountain ink pen). His letters were always a challenge to read, not only written in a hand that any General Practitioner would envy but also full of exotic or obscure words, Latin, quotations, poetry and a uniquely 'Connoresque symbology' which you simply had to work out yourself. Over the 17 years that Henry wrote to me I began to understand it but it was my partner who positively delighted in working it out—she would often ask 'Got a Henry letter for me to decipher?' and when I had, she would spend a happy hour or so trying to translate it.

On occasion, Henry would ring you. His presence always loudly announced with the familiar "*Connor here*!", and then he'd get straight down to business. There was no mucking about when on the phone with Henry, and he rang (and hung up) whenever it suited him. I remember the late Dr Robert (Bob) Cooper (1917–2004) aggrievedly telling me in 1989 that when he was curator at the Auckland Museum Herbarium in the mid-1960s Henry rang him late one Sunday night, getting him out of bed in the process, to 'have a go' about a news article he'd read stating that pampas grass (*Cortaderia* sp.) was hybridising with the endemic toetoe (*Austroderia* (but at that time treated as *Cortaderia*)) in the Waitakere Ranges. Henry assumed that as this was about plants in Auckland region then somehow Cooper was responsible and, as pampas grass will not hybridise with toetoe, (Henry had experimentally shown this—ironically not appreciating at the time that this knowledge was the precursor to a line of mostly genetic evidence that eventually saw our endemic *Cortaderia* placed in their own endemic

genus *Austroderia* by Linder et al. (2010)) it was essential to put Cooper right. Bob, once he had understood what he was being blamed for, berated Henry at length, a tirade which Henry abruptly cut off by telling Bob that if it wasn't him, well then he needed to find out who was responsible and 'sort it out', whereupon Henry hung up. This story exemplifies Henry's working style, *Cortaderia* was then his interest, the news article was wrong and someone was responsible for this, and even if the person he rang was rung out of bed and not responsible, that was not an issue because something still needed to be done. The cause of science demanded it. Bob Cooper never forgave him but Henry didn't care. It was so important to him that people understood the facts.

Henry had the same view of what he called 'grey literature'. Expressing with considerable vehemence that if something was worth saying it was best to say it in print not in stuff destined to gather dust in filing cabinets. In particular, he viewed the unpublished A.P. (Tony) Druce (1920–1999) checklists as heresy and loathed the way people quoted them as facts. He saw such works as anti-science and uninformed 'proselytizing', viewing their authors as 'false prophets' and their exponents as misguided disciples. It cannot be denied that Henry was a harsh critic. Also, it has to be said that A.P. Druce always so polite and well-mannered was, on the subject of Henry, much less so.

This is not to say that Henry regarded science as a 'pure and august' profession. He rather enjoyed academic (sometimes rather obscure) jokes and had a very dry sense of humour. Sadly, at times, this was way above the heads of his audience and so his wit was lost on others. But if one is looking for examples of some of his finest then one need look no further than his *Festuca* revision (Connor 1998). Consider the opening paragraph of the introduction to that paper where Henry states 'the Latin feminine substantive '*festuca*' has the two-fold meaning 'stalk, stem, straw; a rod with which slaves were touched in the ceremony of manumission' (Andrews 1867); the completion of this paper has seen in part the reality of the *festuca* in the 'release from slavery; the liberation from bondage or servitude' in which I had been held for years by *festuca* the 'stalk, stem, or straw'. Henry disliked revising *Festuca* but only Henry could find a way to voice that through a witty discourse on the meaning of 'festuca'. Henry's fondness for red wine was also nicely captured in his recognition of a new forma of *Chionochloa flavicans*, his *C. flavicans* f. *temata* (Fig. 4). Though it's true that the type locality is Te Mata Peak, Hawke's Bay, Henry maintained that his choice of epithet was really honouring a nearby winery 'Te Mata Estate" whose vintage he was particularly fond of.

Fig. 4. *Chionochloa flavicans* f. *temata* at the type locality Te Mata Peak, Havelock, Hawke's Bay. The epithet '*temata*' conveniently just happens to be also the name of one of Henry's favourite vineyards 'Te Mata Estate'. Photo: Mike Thorsen.

It stands to reason that Henry was also an excellent reviewer (if you could read his writing). I recollect once that Brian Murray (then of the School of Biological Sciences, University of Auckland), Paul Datson and I had written a large manuscript on chromosome numbers of the New Zealand Flora. As the paper included many grass counts then new to science, I suggested Henry review the manuscript. He did so with alacrity and a critical attention to detail rarely seen these days in reviews. He also improved our understanding of the English language and introduced us to a plethora of words that required the constant use of the dictionary to understand, e.g., analphabetos, didactic, elision, to name but a few. We also needed to scour through various Latin dictionaries and were inducted into such abbreviations as '*hic. comm.*' (for '*pers. comm.*'), '*in litt.*' (much preferred Henry argued to '*hic comm.*'

anyway) and his favourite '*nom. altr*'. This Henry insisted we use especially for the Poaceae, thus 'Poaceae *nom. altr*. Gramineae'. Henry disliked 'Poaceae'. In his review, Henry made no apologies for his detailed comments stating that he had learned the hard way himself from the late 'Dr Lucy Beatrice Moore' (1906–1987) (Henry always pronounced one's full name if he knew it) whom he regarded as an absolute terror when reviewing a manuscript written by one of her colleagues. Without doubt, he significantly improved our manuscript.

Henry's stance on writing and science was also clear when it came to Flora writing. It was Henry who told me, he decided that all plant descriptions for the 'Weed Flora' (Webb et al., 1988) had to be based on wild collected New Zealand specimens. He regarded the very idea of modifying descriptions of such plants taken from other world floras to match the New Zealand specimens as 'plagiarism of the very worst kind'. In the same vein, all grass descriptions in Edgar and Connor (2000, 2010) were prepared from measurements and notes taken from New Zealand plants and collections. This may be why many regard our grass flora as such an excellent treatment. Certainly it is one of the few to have detailed descriptions of the caryopsis (R.O. Gardner *hic. comm*.). With respect to flora authorship, Henry was also bluntly emphatic; he absolutely insisted that Elizabeth Edgar had to be senior author of the 'Grass Flora'. He often told me that Elizabeth had effectively written two other floras (Moore and Edgar 1970; Healy and Edgar 1980) and that it was high time she had the honour of being recognised for what she was—our foremost flora writer and expert.

Henry's complexity was also seen when it came to titles and degrees. He was rightly proud of his D.Sc. and most especially his FRSNZ. Sometimes though, he could be snobbish. On learning in 2003 that I had been awarded an 'FLS' he told me it wasn't an honour really because you had to pay for it—but by now I had learned—and so I cheerfully reminded him that you also had to pay for a FRSNZ, and that, at the time, only 10 living New Zealand people held an FLS, which was far fewer than those with an FRSNZ. As I said, with Henry it was always important to stick up for yourself. Still he could surprise you; on learning (somehow) that in 2012 I had been made a Professor for the Dipartimento di Scienze della Natura e del Territorio, Università degli Studi di Sassari, Sardegna, he was the first to offer his congratulations.

Henry once told me that he intended to retire when he turned 90 (Fig. 5). When I asked about this, he said that he had so much to do he wasn't going to stop until he had to. I guess that is exactly what he did. My last botanical dealings with Henry were over the complexities of the grass genus *Hierochloe*. First of all, Henry worried that our species might really be *Anthoxanthum*, as the Russians apparently had said, then he pointed out that Zotov's key was 'no good at all unless you read it backwards' and finally, for a man who hated tag names, he told me that the very large Chatham Islands plants variously called *H. fusca* and *H. redolens* seemed to be a new species for which he suggested the tag name *H*. "phormiiphila". By this time (2011), Henry was feeling that he was getting behind the times. He hated DNA-based taxonomy, and strongly resented the name changes happening in his beloved indigenous Triticeae. I don't believe he ever accepted that the endemic *Connorochloa* named in his honour by Barkworth et al. (2009) was a good genus. I guess it's fitting that the sole New Zealand grass to carry his name was the one he kicked the hardest against (Barkworth et al., 2009).

Fig. 5. Henry Connor at his 90th birthday.

I last saw Henry at Lake Coleridge in September 2013. This was when he attended the Queen Elizabeth II Trust retirement function for Dr Brian Molloy. Though a little hard of hearing and going blind Henry was still in good form. He joked about the lack of scotch, poured a healthy dose of scorn on

a few colleagues seated nearby and asked my views on Linder et al. (2010). He still resented that they had relegated the endemic grass genus *Pyrrhanthera* into synonymy under *Rytidosperma*. "The chromosome numbers are too different", said Henry.

There is no doubt that Henry was mischievous, and, at times, undeniably 'scabrid', to use an apt botanical term, with his words, pen and personality. He could be a total terror, though I do feel he was often oblivious of his actions. Henry certainly dished out what he expected to receive. He was one of those rare people who not only respected academic prowess but also those who fought back; he was plainly uncomfortable dealing with those who couldn't. Because of this mannerism, it often came as a complete shock when he suddenly took your side (usually the result of a 'good' paper you had published). I know he unintentionally unnerved those used to receiving only his harshest criticism when he suddenly showered them with words of praise. He certainly admired honesty in others. There is no doubt he enjoyed his science and appreciated the good work of other researchers (admittedly, so long as it didn't encroach too much on his own fields of interest). He defended his 'turf' religiously. He also loved his Latin and music, and appreciated excellent wine and single malt scotch. He was certainly a man of unexpected turns and contradictions. For example, despite being so well versed in cytology, Henry, as far as I know, never counted the chromosomes of any plant during his career. He also admired Charles Darwin but was a committed Roman Catholic with deep-seated religious convictions. I believe despite his many publications, his books and his way of dealing with the scientific community, he will always be remembered for that crowning achievement of his career the fact that he, and Elizabeth Edgar, produced what is arguably the finest Grass Flora in the world (Edgar & Connor, 2000, 2010). So I am glad that I got over my fear, stood up to him and so got to know Henry—without any doubt he was truly unique, and my science career has benefited from knowing him.

Acknowledgements

I would like to thank my colleagues most especially Rhys Gardner, Colin Meurk, Ewen Cameron, Matt Ward, and Anthony Wright for their comments and recollections of Henry. Kate Boardman and Ilse Breitwieser kindly obtained the images used here of Henry Connor.

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Riparian plans made easy – the Riparian Planner

Rachel Knopp, DairyNZ (Rachel.Knopp@dairynz.co.nz)

Fencing and planting to protect waterways and create riparian zones is now easy with the Riparian Planner, a free online tool that creates a farm-specific riparian management plan.

Plan for your budget

The perception may be that fencing and planting waterways is expensive and difficult. It's easy with the Riparian Planner; you design with your budget in mind and spread costs over a manageable timeframe.

Essential to the dairy industry—The tool is important for dairy farmers with waterways who need a riparian management plan by 2020. Over the next four years, under the Sustainable Dairying: Water Accord, all farms must develop riparian plans on dairy farms and supporting land. The Riparian Planner also helps fulfil farmers' consent and supply conditions.

Riparian zones and environmental gains

Fencing and managing riparian zones helps provide dense vegetation that can filter out sediment and nutrients before they enter waterways and reduces the likelihood of erosion. Planting trees helps to provide shade to the stream and increases habitat for native wildlife like birds and insects.

What does a riparian management plan look like?

The farm-specific plan includes a timeframe, budget, estimates of the number of region-specific plants required, costs and time frames for fencing, and planting and weed control actions for long-term riparian zone management. As a riparian zone develops or anything changes on-farm, plans can be revisited and updated.

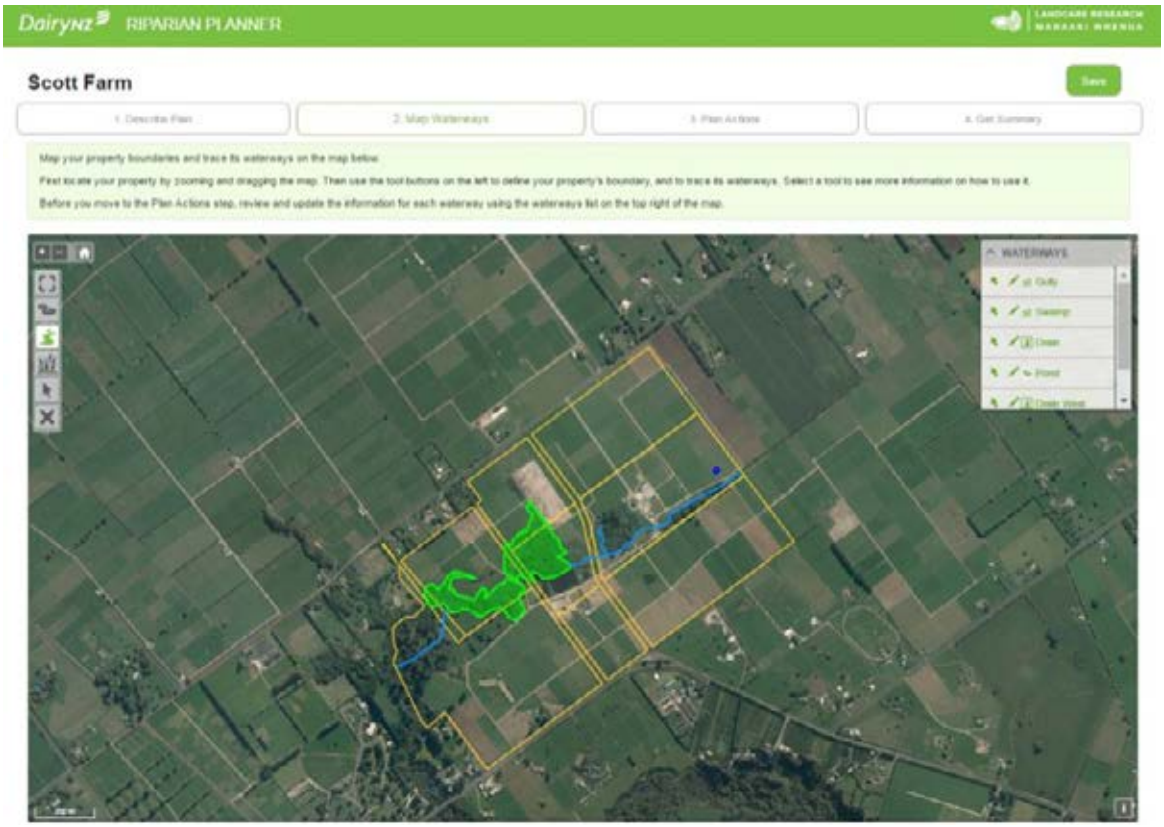
Weeds and riparian zone maintenance

Riparian zones can become weedy after fencing. The key is to plant and manage what you can. Choose to plant native trees or shrubs (evergreens) to shade out weeds. Broadleaf spray can remove most weeds and retain grass.

Easy to use tool

The tool's map feature and 'how to' videos mean users are fully supported and planning is easy. Step-by-step planning begins with mapping each waterway and describing its current state by width, area fenced off, vegetation type—if it has weeds, exotics, natives or grass. Lastly, you choose a one to five year timeframe.

> *"It gives us as farmers an idea of how many plants we need and costings and the exact measurements of areas. It's an accurate tool." John Bluett, Waikato dairy farmer.*



Support for the Riparian Planner

The Riparian Planner was developed by DairyNZ and Landcare Research with input from key environmental experts and regional councils across the country. It is designed for farmers and rural professionals.

If you have any questions, please contact Matt Highway, DairyNZ senior developer, ph: 027 702 4378, email: Matt.Highway@dairynz.co.nz.

Eco-sourcing of plants – what, why, where and how

Chris Horne, NZPCN member, Wellington (jchorne@clear.net.nz)

In my opinion, eco-sourcing occurs when Nature is given the opportunity provided by intensive and sustained control of pest animals, pest plants and other ecological weeds. I believe that natural ecological restoration is genetically sound and requires considerable patience. Thus I believe that Wellington city's Scenic Reserves, Recreation Reserves and Town Belt should be protected by unrelenting pest control and not be subjected to intervention in the form of the planting of eco-sourced plants, except as noted in "Nature's role" below.

Observations

My opinion is based on:

- 1957/58 and 1958/59 with vegetation survey teams on the Forest Research Institute's Ecological Forest Survey in several North Island axial ranges, I saw forests severely degraded by large numbers of pest animals.
- 1961/62 with vegetation survey teams on the Forest & Range Experiment Station's High Country Survey in three South Island ranges, I saw plant communities below the bush line, and on the tops, in a similarly degraded state.
- Early 1980s in the Tararua Range, I saw vigorous growth and abundant flowering of alpine species, presumably aided by NZ Forest Service deer-culling and helicopter hunting.
- Late 1990s onwards the numbers of seed-carrying birds, e.g., tūī and kererū, began increasing in Wellington, resulting from Greater Wellington Regional Council's (GWRC) possum/rodent/mustelid control in the city's reserves.
- 2001-04 possum-control contract work for GWRC, filling c.275 bait stations in seven Wellington reserves; seedlings of species palatable to possums, and to seed-eating rodents, began appearing after about 18-months' work.
- 2007 contracted by GWRC, with Barbara Mitcalfe, to do a botanical survey in Albemarle Road 'Reserve', Northland, Wellington; two nīkau seedlings found—presumably the seeds had been brought by birds from Otari-Wilton's Bush or other bush areas nearby.

Kererū. Photo: Jeremy Rolfe.

- 1980-present: In 1980, my property in Northland, Wellington, had lawns back and front and on Wellington City Council's (WCC) berm. In 1981, WCC gave me 15 native plants for the berm; other native plants, mostly self-sown, have since shaded out all three lawns. Natural arrivals via the wind or birds include: māhoe, rewarewa, patē, hangehange, five-finger, *Coprosma grandifolia*, *Parsonsia heterophylla*, hound's tongue fern, and *Rubus cissoides* (diameter at base c.10 cm). In 2015, I found two tawa seedlings, one on the WCC berm and one at the front of my section—kererū in action! To increase the chances of seeds germinating, I control pest animals on the property with several traps.

Tawa. Photo: Jeremy Rolfe.

Nature's role

I support the adage that we should 'get rid of the bad things, and the good things will come'. I believe that eco-sourcing is best left to Nature. Seeds, and pollen, of native plants are spread by the wind, or by birds, and, in the case of some species, by gravity or water. I believe the only ecologically—and genetically—sound exception to this is when an indigenous ecosystem must be protected against the "edge-effect", by the planting around its perimeter of seedlings grown from seeds collected from naturally occurring plants within it.

Wellington's "primary forest remnants"

Park (1999) recorded 401 sites in Wellington with what he defined as "primary-forest remnants". These were vegetation stands in which he said "… canopy tree species characteristic of the district's primary forests' canopy tree species are naturally occurring." These remnants, which he said are " … fairly evenly spread across the City's land area," provide a range of seed sources suited for the natural, genetically and ecologically sound restoration of the city's regenerating and mature native forests, shrublands, adventive scrublands and even plantations.

Human intervention

The term "eco-sourcing" has a 'feel-good' sound to it but, because it involves bringing to an indigenous ecosystem plant material and soil material from beyond it, it may be genetically and ecologically unsound, because the genetic composition of a species may vary from one location to another. It puts people's pleasure of planting ahead of ecologically-sound management of our precious indigenous ecosystems. It ignores natural patterns of plant distribution, genetic variation, and associated soil organisms such as bacteria and mycorrhizal fungi. This practice is turning indigenous ecosystems around the city into 'designer ecosystems', because people are choosing what species to plant, choosing where to source them from, and then choosing where to plant them. These 'botanic gardens' will disrupt the evolved resilience of the ecosystems as the planted plants begin to reproduce, and perhaps hybridise, with naturally occurring members of the same species. The sites will become of little value for future botanical, ecological and genetic studies, because their composition has been dictated by people, not by Nature. Examples of plantings that I consider inappropriate are listed in Horne (2016).

Pest control crucial

Wellingtonians, present and future, must systematically seek and remove adventive biota from our indigenous ecosystems, to foster the restoration of their natural functioning and resilience. We must strive for increasing success in our efforts to protect Wellington's indigenous flora and fauna, aided by:

- the development of improved pest-animal toxins and traps, and by biological control methods, as they are developed.
- GWRC and WCC investing more in the control of pest plants and other ecological weeds, and in biological control methods, as they are developed.

References

Horne, C. 2016: Eco-sourcing of plants – what, why, where and how. Wellington Botanical Society Bulletin 56: 19-25.

Park, G. 1999: An inventory of the surviving traces of the primary forest of Wellington city. Wellington City Council, Wellington.

Further reading

Mitcalfe, B, Horne, JC. 2012: Ecological restoration in WCC reserves. Letter 22 April, 2012, to WCC staff Amber Bill, Manager, Community Engagement & Restoration, and Myfanwy Emeny, Biodiversity Coordinator. Wellington City Council records, Wellington.

Simpson, P, 2000: Genetic Pollution. Pp. 271-272 in: *Dancing Leaves – The story of New Zealand's cabbage tree, tī kōuka*. Canterbury University Press, Christchurch.

Presented at the Wellington Botanical Society's panel discussion on eco-sourcing on 21 July 2014; summarised here from Horne (2016), printed with permission.

NZPCN Annual Plant Conservation Awards

The prestigious New Zealand Plant Conservation Network Awards are now in their eleventh year. We are now calling for nominations for the 2016 awards. The purpose of these awards is to acknowledge outstanding contributions to native plant conservation.

Award categories are:

- Individual
- School
- Council
- Community
- Plant Nursery
- Young Plant Conservationist of the Year (under 18 years at 30 June 2016)

The nomination form is available from the Network website:

- Nomination form 2016

We look forward to your nominations; you may make multiple nominations under different categories. Anyone is eligible to make nominations, not just Network members.

The awards will be presented at the 2016 Annual General Meeting on Tuesday 11 October at the Treehouse, Wellington Botanic Gardens, commencing at 6.00 p.m. Winners will be informed in advance of the meeting.

Nominations close on **Sunday 18 September 2016.**

NZPCN Annual General Meeting

The Network's AGM will be held in Wellington at 6.00 p.m. on Tuesday 11 October at the Wellington Botanic Gardens Treehouse, 101 Glenmore St, Thorndon. The meeting will be followed by a talk by Dr Peter de Lange titled '*From Kirk to now—New Zealand Plant Conservation and its present-day challenges.*'

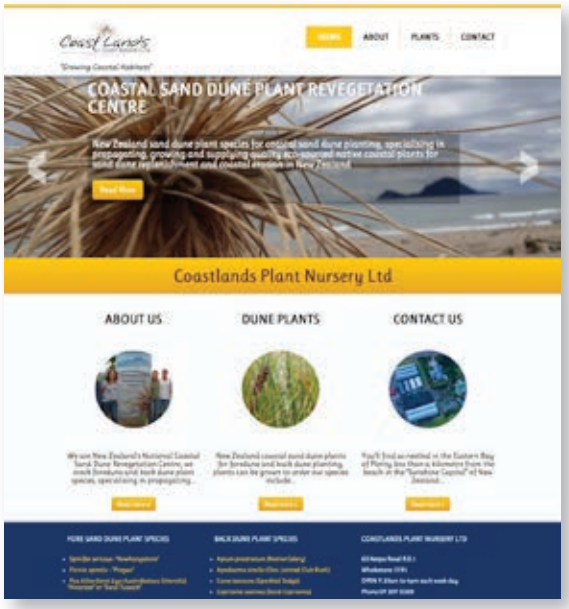
There will be refreshments available. Public parking is available on Glenmore Street; there is no parking available at the Treehouse. If any member has matters that they wish to discuss at the AGM, they are requested to inform the secretary, Rewi Elliot (Rewi.Elliot@wcc.govt.nz) before the meeting.

Editor's Note: In previous issues, we have featured members of a group that is very important to the running of the Network, i.e., members of the Council. This month, we turn our attention to a member of another very important group, our sponsors. Coastlands Plant Nursery is a sponsor of the NZPCN website, annually contributing generously to the Network. Coastlands Nursery has also been a conference sponsor. Coastland's contributions to NZPCN have been well received and are gratefully acknowledged. We hope that you enjoy reading about the work of this nursery that specialises in the native plants of our coast. The New Zealand Plant Conservation Network is a registered charity and relies on membership, sponsorship and donations to maintain, and continue the improvement of, the dissemination of native plant information.

Coastlands Plant Nursery—"Growing Coastal Habitats"

Jo Bonner, Coastlands Plant Nursery (coastlandspn@xtra.co.nz)

We are nestled in the beautiful Eastern Bay of Plenty, less than a kilometre from the beach and have been supplying coastal natives for 16 years from Northland to Bluff. Our speciality is the supply of quality eco-sourced native plants for sand dune restoration and coastal erosion; we annually produce 500,000 plants. In summer, we cover the North Island and top of the South Island collecting spinifex, pingao and some back dune species depending on customers' requirements.



The Coastlands Plant Nursery website home page: www.coastlandsnursery.co.nz

Mother Nature determines when the seed is ready; pingao can be ripe from mid-December to the end of January. It involves some planning to get the seed collected in time which is made worse by years where El Nino is present—it's not unusual to be sand-blasted collecting seed on the beaches as a cyclone bears down! Christmas holidays go out the window and, when 4 million Kiwis head to the beach, we are there too, waiting in the traffic queues, lacquered in gallons of sunscreen (to which the sand sticks) and constantly asked if we are collecting rubbish!!

It's all worth it. We love what we do and nothing is too difficult; if it's hard to grow or on the brink of extinction, we are happy to grow it. At the moment, we are working on *Pimelea villosa,* a plant 'at risk

declining' (de Lange et al., 2013), we are presently growing it by cutting and seed for four separate councils throughout the North Island; it's really obvious these plants have different growth habits from different regions even when placed in similar environments in tunnel houses.

We have a rigorous tracking system in which seed/cutting material is given its own registration number when it arrives. It is then tracked until dispatch; different regions are colour coded with tags.

Our team of eight consists of five full time and three part-time staff, most with qualifications and experience and including one National Diploma in Horticulture, three Trade Certificates (Advanced) in nursery production, and a total of 65 years accumulated in the nursery industry. We are proud to be supporting the NZPCN website; we use it regularly to identify plant species and update our records of name changes.

Reference

de Lange, PJ; Rolfe, JR; Champion, PD; Courtney, SP; Heenan, PB; Barkla, JW; Cameron, EK; Norton, DA; Hitchmough, RA. 2013: Conservation status of New Zealand indigenous vascular plants, 2012. New Zealand Threat Classification Series 3. Department of Conservation, Wellington. 70 p.

New Zealand Indigenous Flora Seed Bank (NZIFSB) – Seed collecting with UK National Tree Seed Project

Jessica Schnell (J.L.Schnell@massey.ac.nz) and Bede West (B.West@kew.org)

Seed collecting of *Prunus avium* (sweet cherry), *Prunus padus* (bird cherry) and *Rubus idaeus* (red raspberry) at Bucknell Hill and Burry Ditches, Shropshire, for UK National Tree Seed Project 20–21 July 2016

This month we report on a recent seed collecting trip Jess took part in with Bede West, Fieldwork Officer for the UK National Tree Seed Project and Maya McCracken, Seed Collections Assistant, Millennium Seed Bank Partnership, Royal Botanic Gardens, Kew. The UK National Tree Seed Project established by the Royal Botanic Gardens, Kew, in 2013 with the aim of establishing a national tree seed collection for long term conservation and to facilitate research to better understand and manage the native trees in the UK landscape. The project will build a national *ex situ* collection of UK tree seed, maintained and managed by the Millennium Seed Bank (MSB), Kew. The collection aims to be genetically comprehensive and comprise sufficient seeds to support research and conservation, in order to meet the challenges facing UK forests (Kallow, 2014).

The main outputs of the project are to:

- establish an accessible, genetically representative, *ex situ* seed collection of UK trees and shrubs,
- foster research to overcome constraints to *ex situ* conservation and the use of UK tree species, and
- raise public awareness of the project and the role of *ex situ* conservation in general, to meet the challenges facing UK forestry.

Bede West and Jessica Schnell collecting *Prunus avium* using the pole pruner. Photo: Jessica Schnell.

Further information about the UK National Tree Seed Project can be found at: http://www.kew.org/science-conservation/research-data/science-directory/projects/uk-national-tree-seed-project

The first day of seed collecting began with a 320 km drive to Shropshire where we assessed the first site with *Prunus padus* trees at Bucknell Hill. Unfortunately, there were not many fruits on the trees nearby so we explored further along the track for more trees or any of the other target species. A couple of yew trees were found with some immature fruits forming (information which will assist collections at the site in the near future). When we approached Burry Ditches, however, *P. avium* around the car park was in full fruit which

helped to lift our spirits. On the second day, we started with collecting from 20 *Rubus ideaus* bushes. This took most of the morning. In the afternoon, we collected *P. avium* using an impressive, extendible 10 m pole pruner, trying our best to avoid the nettles that inhabited most of the forest floor. We collected fruits from five *P. avium* trees so it was a very productive day. JLS was very happy to be able to put theory into practice and see how seed collecting was run in the UK. The seed collecting trip helped her to see what methods for seed collecting work well with tree and shrub species, and she was very impressed with the biosecurity kit that was used on the equipment and boots between sites as well as at the end of the day. This knowledge will be brought back to New Zealand where it can be applied when seed collecting in the 2017 season and be passed on to seed collectors in New Zealand.

Rubus ideaus ripe for collecting. Photo: Jessica Schnell.

JLS extends her thanks to Bede West for the opportunity to take part in this seed collecting trip with the UK National Tree Seed Project.

Reference

Kallow, S., 2014: UK National Tree Seed Project Seed Collecting Manual. Royal Botanic Gardens Kew, Millennium Seed Bank, Ardingly.

Book wanted

I am attempting to source a copy of Rod Seppelt's '*The moss flora of Macquarie Island*' (2004 – Australian Antarctic Division). I have exhausted all of my usual avenues for specialist botanical resources, so I wondered if the specialist botanical individuals in the Network might be able to help.

My preference is to purchase, but a six-month borrow would also be very useful. If anyone can help, please contact me, Alex Fergus (afergus@doc.govt.nz). Thanks in anticipation.

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):

11th Australasian Plant Conservation Conference

La Trobe University and the Australian Network for Plant Conservation (ANPC): 11th Australasian Plant Conservation Conference (APCC11) to be held in Melbourne 14–18 November 2016 at the Royal Botanic Gardens Victoria. The organising committee formally invites NZPCN members to attend the APCC11 conference and submit an abstract for a presentation on one of the six following conference themes:

- Assisted colonisation as a practical tool for climate change mitigation.
- Conservation for people and nature: how do we maximise the benefits for both?
- Rethinking landscape restoration: seed production, provenance, conservation planning.
- Holistic conservation: the role of mutualisms in ensuring functional ecosystem recovery (eg. pollinators, soils).
- Rescuing small populations from extinction.
- New challenges, emerging ideas.

Following the conference, many conference papers will be published in two issues of Australasian Plant Conservation.

Register and more information:
conference website

Auckland Botanical Society

Meeting: Wednesday 7 September at 7.30 p.m. for a talk by Alison Wesley titled 'Madagascar'. **Venue:** Unitec Room 115-2017.	**Contact:** Maureen Young, email: youngmaureen@xtra.co.nz.
Field trip: Saturday 17 September to Waikumete gumland.	**Leader:** Rhys Gardner. **Contact:** Maureen Young, email: youngmaureen@xtra.co.nz

Rotorua Botanical Society

Field trip: Saturday 3 September to Lake Arapuni, Waikato River. **Meet:** the car park Rotorua, at 08:30 a.m. or the ramp at Jones Landing at the end of Lake Arapuni Road at 9:30 a.m. **Grade:** easy; this is a boat trip and in case cancellation you must tell the trip leader that you are coming by Thursday 1 September. **Cost:** donation for boat fuel.	**Leader:** Willie Shaw ph: 07 345 5912 (hm) or 021 757522; email: willie.shaw@wildlands.co.nz.

Whanganui Museum Botanical Group

Field trip: Saturday 3 September. Kitchener Park, Feilding. Meet: Whanganui police station 9.15 a.m. or at reserve entrance 10.00 a.m.	**Contact:** Robyn Ogle, email: robcol.ogle@xtra.co.nz.
Meeting: Tuesday 6 September at 7.30 p.m. for a talk by Bill Fleury on the 'Battle for our Birds' programme.	**Venue:** Museum's Davis Lecture Theatre.

Wellington Botanical Society

Field trip: Saturday 3 September to Tawhai St Reserve – Horoeka Street Reserve loop, Stokes Valley. **Meet:** 9.30 a.m. at Horoeka Street Reserve car park.	**Co-Leaders:** Michele Dickson, ph: 04 972 2350; Sunita Singh, ph: 04 387 9955, mobile 027 4052 987.
Meeting: Monday 19 September at 7.30 p.m. for a talk by Rodney Lewington, Carol West and peter Beveridge titled 'Can't tell a moss from a liverwort, don't know a lichen?'.	**Venue:** Victoria University Lecture Theatre M101, ground floor Murphy Building, west side of Kelburn Parade; enter about 20 m below pedestrian overbridge.
Field trip: Saturday 1 October to Otari-Wilton's Bush to continue our enquiry into lichens, mosses, liverworts and hornworts. **Meet:** 9.30 a.m. at Otari-Wilton's Bush Information Centre/Te Marae o Tane, 160 Wilton Road, Wilton. **Bring:** a hand lens, note book, pen and your lunch; tea and coffee provided.	**Leaders and helpers:** Rodney Lewington, Carol West and Peter Beveridge.

Nelson Botanical Society

Field Trip: Sunday, 18 September—Waimea weedbusting, Wairoa Gorge. Meet: Church steps at 9.00 a.m. Please bring pruning gear.	**Leader:** Shannel Courtney, ph: 03 546 9922.
Meeting: Monday 19 September at 7.30 p.m. for a talk by Chris Ecroyd titled 'Alaskan ecology'.	**Venue:** Jaycee Rooms, Founders Park, Nelson.

Driftwood Retreat and Eco-tours

Five day tours to D'Urville Island: (http://driftwoodecotours.co.nz/durville-island/) and four day tours of alpine flora (http://driftwoodecotours.co.nz/alpine-flora-tour/) are available.	**Further information:** www.driftwoodecotours.co.nz.

Canterbury Botanical Society

Meeting: Monday 5 September at 7.30 p.m. for a talk by Anna Henderson titled 'Seed dispersal by birds in small isolated Nth Canterbury forest remnants'. **Venue:** Upper Riccarton Library community meeting room, 71 Main South Road.	**Contact:** Alice Shanks, ph: 03 337 1256, email: alice@caverock.net.nz.
Field trip: Saturday 10 September to Taylors Bush, Oxford.	**Contact:** Alice Shanks, ph: 03 337 1256, email: alice@caverock.net.nz.

Otago Botanical Society

Field trip: Saturday 3 September to Waianakarua Scenic Reserve.	**Contact:** John Steel, ph: 021 2133 170, email: john.steel@otago.ac.nz.
Meeting: Wednesday 14 September, 6.00 p.m. 15th Annual Geoff Baylis Lecture by Dr Nick Mortimer titled 'Life on Zealandia'. **Venue:** Castle 1, University of Otago (drinks and nibbles starting from 5.15 pm in the concourse) **note change of venue**.	**Contact:** Robyn Bridges, ph: 03 472 7330.

NEW ZEALAND PLANT CONSERVATION NETWORK

PLANT CONSERVATION AWARDS: 2016

The New Zealand Plant Conservation Network is now accepting nominations for the 2016 awards. The purpose of these awards is to acknowledge outstanding contributions to native plant conservation.

The award categories are:

- **Individual** involved in plant conservation
- **Plant nursery** involved in plant conservation
- **School** plant conservation project
- **Community** plant conservation project
- **Local authority** protecting native plant life
- **Young Plant Conservationist** of the Year (under 18 years on 30 June 2016)

More information about the awards and additional nomination forms are available on the Network website - www.nzpcn.org.nz. You can make multiple nominations under different categories. Anyone is eligible to make nominations, not just Network members. The awards will be presented at the **NZ Plant Conservation Network AGM** to be held in Wellington on **Tuesday 11 October 2016** (starts at 6pm at the Wellington Botanic Gardens Treehouse). Winners will be informed in advance of the meeting. Nominations close on **Sunday 18 September 2016.**

NOMINATION FORM

Category (please circle):

Individual	*Plant*	*Nursery*	*School*
Community	*Local Authority*	*Young Plant Conservationist*	

NAME OF NOMINEE: _____

Contact details for person, school, nursery, community group or local authority:

Address: _____

_____

Phone: _____ Email: _____

REASONS FOR NOMINATION:
(*Please add more details on separate pages if required.*)

Your Name: _____

Relationship to Nominee: _____

Your contact details:

Address _____

_____

Phone _____ Email: _____

Please send your nomination form by Sunday 18th September 2016 to:
Catherine Beard (NZPCN Awards Convenor)
Department of Conservation
Private Bag 3072, Hamilton 3240

Or by email to cbeard@doc.govt.nz