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NEWSLETTER OF THE NEW ZEALAND PLANT CONSERVATION NETWORK

Please send news items or events to events@nzpcn.org.nz
Postal address: P.O. Box 16-102, Wellington, New Zealand

E-NEWSLETTER: NO 70. SEPTEMBER 2009 Deadline for next issue: Thursday 15 October 2009

Message from the President

Conservation Week has come and gone for another year. What did you do for Conservation Week? For many of us, Conservation Week would have simply been another typical busy week in which we worked on various aspects of plant conservation. However, for some of us there may have been a special event and, if that were the case, then we would love to have a photograph and a few words. Do contact us if you would like to share your special moments from Conservation Week. Yes, conservation of plants is not just one week each year but last week was an important week in the calendar to help raise the profile of native plants. For the media, anything about animals seems to be more important than plants. Have you seen Issue Four of "*Good – New Zealand's guide to sustainable living*"? There is an article headed "Kiwi Icons, 10 national treasures you can help save this summer". All 10 are animals! I intend to contact the Editors to ask if they would be interested in another article in which there were 10 native plants. Is anyone interested in helping to prepare such an article if the magazine showed an interest?

I am sure that readers of this month's newsletter will be particularly interested in the article by John Barkla and Craig Wilson about the native plants along the 150-km long Otago central rail trail. I wonder if any other members of the Network have done anything similar. Cycling along rail trails is becoming very popular and here indeed is an opportunity to promote both cycle ways and native plants. Is this something that you could do in your part of New Zealand?

We are receiving some very useful comments about the Network Draft Strategy so please keep them coming in. Need I say it again, the Network is your Network and you must have a say as to what the Network does. This is a very important time and we need to make sure that we have it right for the next five years. I was a little disappointed to find that some people "don't know what the Network does—apart from the website". When the Network was first established, a major factor in deciding on the actions of the Network was the Global Strategy for Plant Conservation (GSPC) with its 16 targets set for 2010. The Network (and no one else) has been largely responsible for addressing most of those 16 targets. Not sure what the GSPC is all about or not sure what those 16 targets were? If so, I urge you very seriously to look them up on the internet. These are major achievements and I suspect that no other country has done so much in such a short time to address those 16 targets. As it happens, the GSPC is under review and there is now the Proposed Updated Global Strategy for Plant Conservation 2011–2020. The Network is making a submission and indeed anyone can register and make a submission. On the subject of "What has the Network done?", I would make the final comment that the quality and content of the website is second to none when it comes to native plants and their conservation. It is highly valued and regularly used every day by thousands of people throughout New Zealand and overseas. If that is not a major achievement that has had a profound effect on plant conservation in New Zealand then I don't know what is.

Earlier this year, I thought it would be useful if I could persuade some of our Botanical Gardens to write about *ex-situ* conservation. Several have agreed to do just that and I am delighted to see that this month, Tom Myers and Shirley Stuart, on behalf of the Dunedin Botanic Garden, have kindly provided a very informative and thought provoking article. Note that they also talk about the GSPC.

PLANT OF THE MONTH – *Ourisia modesta*

Ourisia modesta. Photos: (left) Jeremy Rolfe, (right) Colin Ogle.

Plant of the month for September is *Ourisia modesta* (creeping foxglove). *Ourisia modesta* is a small creeping herb with smooth rounded leaves, occasionally with hairs confined to veins and leaf margins. White flowers appear in January to December.

It is endemic to the North, South and Stewart Islands. It is often found in beech forest alongside rivers, usually in seepages or on poorly drained terraces, sometimes associated with stream and river banks, or in flushes within subalpine scrub. It is known from only one site in the North Island, in the Ruahine Ranges, where it has not been seen recently.

Ourisia modesta is rare in the wild. Dr Leonard Cockayne described it in 1923 as "a species of local distribution which even indefatigable collectors may never see". Its current threat status is Nationally Critical. As the species is very cryptic, it is easily overlooked, so the extent of its decline or the degree of threat this small herb actually faces is unclear. Competition with weeds and natural succession are both threats in the wild. The Network fact sheet for *O. modesta* can be seen at: www.nzpcn.org.nz/vascular_plants/detail.asp?PlantID=191

There are some very, very important events coming up so I do urge you to read the Newsletter with care and make some notes in your diary. There is the forthcoming conference and workshop of the New Zealand Plant Radiation Network in November at Lincoln. You're not sure what that is—well then read the details below. Another important announcement is the call for nominations for this year's Network Plant Conservation Awards. There are many good people and good projects out there very worthy of recognition. The Annual General Meeting for the Network is not far way and this year it will be in Auckland. It's a important AGM because there are some changes that will take place in the membership of Council. In addition, there is to be a very worthwhile meeting that will take place at the same time. This is on ecosourcing. I look forward to seeing you there. There are lots more announcements below—students in particular are advised to have a look.

First definitive list of Bay of Plenty vascular flora published

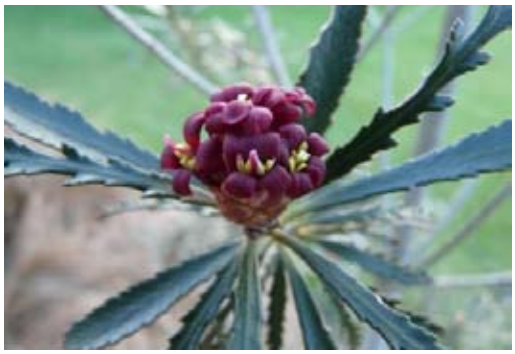
A group of Rotorua Botanical Society botanists has recently published a checklist of indigenous and naturalised vascular plant taxa currently known to be present in the Bay of Plenty, or to have been present in the past (*Checklist of indigenous and naturalised vascular plants in the Bay of Plenty* by S.M. Beadel, C. Ecroyd, P. de Lange, P. Cashmore, W. Shaw and S. Crump) Copies can be obtained from the Rotorua Botanical Society for $25 plus postage and packaging.

Refer to the website www.wildlands.co.nz/ botanical.htm or contact Sarah Crump ph: 07 3497 412, e-mail: scrump@doc.govt.nz.

Plant conservation at the Dunedin Botanic Garden

Tom Myers and Shirley Stuart, Dunedin City Council (tmyers@dcc.govt.nz; sstuart@dcc.govt.nz)

The catchphrase "Conservation begins at home" can apply to botanic gardens as much as to anyone else (Crane, 2000). As a botanic garden, our opportunities for conservation of plants are diverse. Perhaps the question could be asked how we can work in a local, national and international sense to conserve plants. Unlike the NZPCN, we also include birds and non-native plants within the scope of our role.



Pittosporum patulum is a garden-worthy plant grown here that faces threats in its natural environment. Photo: Barbara Wheeler.

As a Botanic Garden, what we do and grow is defined by our management plan, which is publicly consulted (Community Recreation and Planning, 2000). Visitors to the garden can view and compare plants from around the world; the conservation-minded can consult or advise on plants and propagation techniques.

Living Collections

"Living collections" are how we arrange plants for curation and public viewing. With good plant records, both native and exotic plants can play an important part in "*ex-situ*" conservation.

Growing plants adds to our understanding of them and, in the case of rare or endangered plants, it also makes them more accessible to people. Good presentation and interpretation can inspire people to learn about plants. The collections are used as an educational resource by local schools and departments of the University of Otago. They are also used for research such as a recent study of cold hardiness of southern hemisphere plants (Bannister & Lord, 2006).

The New Zealand native plant collection is a natural focus for education about native plants. It is divided into a number of sub-collections based on taxonomy (e.g., the *Asteraceae* plant collection), plant habit (e.g., divaricating plant collection) and habitat (e.g., coastal plant collection). The scope of these sub-collections allows diversity in the native species we can cultivate and display. Running through the native plant collection is a trail honouring the botanist Daniel Solander. Native plants are also grown in other collections throughout the Botanic Garden such as in our Rock Garden, Alpine Plant Collection, thematic borders and specimen trees.

Conservation Opportunities

Within the Botanic Garden, there are several areas of regenerating native bush that we work on to keep weed and pest free. It is in these areas we can focus on our "local" wild species. Notable plants include *Pseudopanax ferox* (Allen, 1994) and several species of mistletoe (Anon, 2000). The garden is used by a good range of native birds including bellbird, tui, wood pigeon and New Zealand falcon.

Outside our boundaries, we depend on partnerships, primarily with the Department of Conservation, which we have helped with propagation and by acting as an "*ex-situ*" repository for endangered species. We look to the Otago Regional Council for regional leadership in biodiversity outside the conservation estate and would welcome increased involvement with regional issues.

Seed or cuttings collected from wild plants are propagated and returned to the Department of Conservation for use, such as this specimen of *Lepidium sisymbrioides*. Photo: Shirley Stuart.

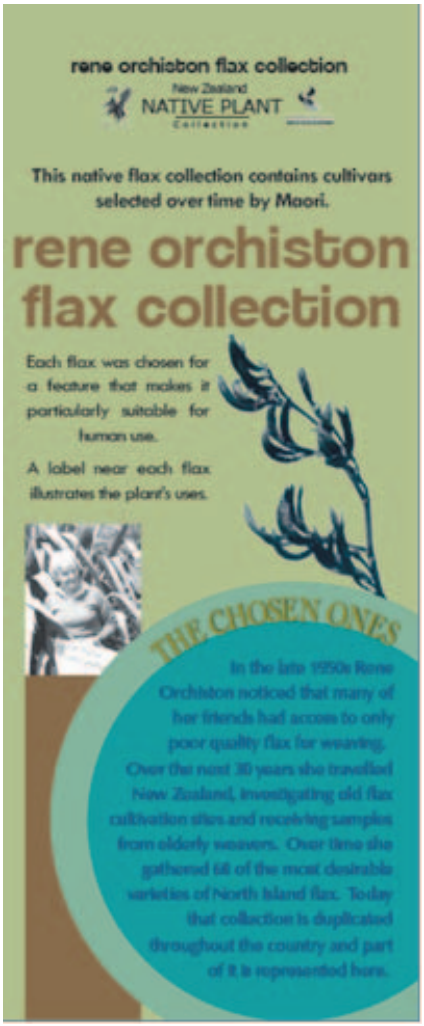
Conservation targets

A subject that should be familiar to many NZPCN members is the Global Strategy for Plant Conservation (GSPC). This strategy was coordinated by Botanic Garden Conservation International and adopted by the United Nations Convention on Biological Diversity in 2002 (Convention on Biological Diversity, 2005). It set 16 targets for the year 2010, including, for example, Target 8 dealing with *ex-situ* conservation and Target 14 with public awareness of plant conservation. This strategy has been a key discussion area of recent NZPCN meetings.

We accept our role in the targets, participating in international programmes by Botanic Garden Conservation International (BGCI), such as a recent survey of threatened medicinal plants, as well as in local area programmes such as the workshops held on "*ex-situ*" conservation by the NZPCN (Christchurch 2005, Wellington 2008). It is important to clarify that municipally operated botanic gardens are not the primary provider of biodiversity policy or governance; for this, we need to look to central or regional government that have appointed roles.

Public face of conservation

We engage the public through events, tours and talks as well as in interpretive signage. Often these are complementary: a self-guided education kit looks at traditional Maori use of native plants and we also grow a number of harakeke from the Rene Orchiston collection Scheele, 2005), with signage giving some background to the collection and labels that illustrate uses of the cultivars.



In 2004 plants of the Rene Orchiston collection were sourced from the National New Zealand Flax Collection.

Outside the garden, we have given gardening advice to the Orokonui Ecosanctuary on its proposed rare plants garden and identified a number of species that we can propagate and grow on for this garden. Kaka bred at the Botanic Garden Aviary have recently been released into the ecosanctuary (Orokonui Sanctuary, 2008).

Talk to us

We are popular with the Dunedin public (Dunedin City Council, 2009) and have a good national profile. Although we have attended NZPCN conferences, very little contact has arisen for us. Although we cannot fund projects, it is possible we can participate. If you don't think of involving us in conservation projects, who will?

References

Allen, R. 1994: *Native plants of Dunedin and its environs*. Revision of William Martin's original text for the Dunedin Naturalists' Field Club. Southern Heritage 150 series, number 3. Otago Heritage Books.

Anon 2000: RARE BITS. Conservancy News: Otago, no. 39 (December) p 14.

Bannister, P.; Lord, J.M. 2006: Comparative winter frost resistance of plant species from southern Africa, Australia, New Zealand, and South America grown in a common environment (Dunedin, New Zealand). *New Zealand Journal of Botany* 44: 109–119.

Community and Recreation Planning 2000: Dunedin Botanic Garden Management Plan. Dunedin City Council.

Convention on Biological Diversity 2005: Global Strategy for Plant Conservation. COP 6 Decision VI/9.

Crane, P.R. 2000: Conservation begins at home. *Kew Scientist* 17: 2.

Dunedin City Council 2009: Research First - Dunedin City Council 2009 Resident's Opinion Survey. Dunedin City Council, Dunedin. 84 pp.

Orokonui Ecosanctuary 2008: Newsletter no 35.

Scheele, S. 2005: *Harakeke: the Rene Orchiston collection*. 3rd edition. Manaaki Whenua Press, Lincoln, New Zealand.

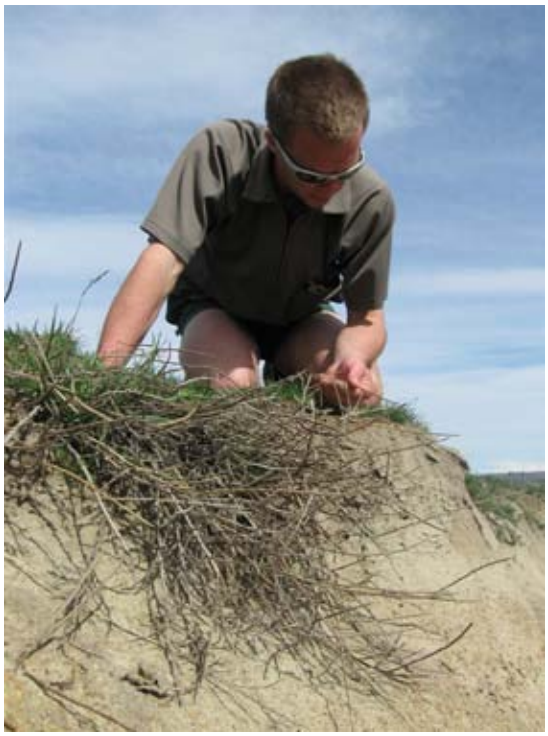
Otago Central Rail Trail – a sanctuary for native plants?

John Barkla & Craig Wilson, Department of Conservation (jbarkla@doc.govt.nz; cwilson@doc.govt.nz)

While on holiday during spring 2007, one of us (JB), cycled the Otago Central Rail Trail (OCRT) and was surprised to encounter populations of threatened 'spring annuals'. This opened our eyes to the possibility that the 150 km long corridor through Central Otago drylands might have other botanical treasures awaiting discovery, and was the catalyst for a more thorough survey during spring 2008. Apart from identifying and recording the location of threatened plants, the scope of the survey broadened to include creating a comprehensive plant list, locating notable plant communities, evaluating the success of past revegetation efforts, and identifying suitable areas for future revegetation.

Background

Since the decommissioning of the Otago Central branch railway line, there is anecdotal evidence that vegetation diversity and stature along the line has increased. Despite the high number of people using the OCRT, developed on the former railway line, and the investment DOC and others have made in developing and maintaining the trail, there has been little work on documenting the values of the native plants and communities present.



Craig Wilson examines *Carmichaelia curta*. Photo: John Barkla.

The survey

Over of four days, we slowly drove the trail, stopping to search habitat, on foot, that we considered likely to hold threatened or interesting species. A GPS and cadastral maps were used to determine the width of the rail trail corridor, and guide search-efforts where parts of the corridor had been fenced into adjoining paddocks.

What we found

Overall, 166 vascular plant taxa were recorded of which 86 are indigenous and 80 are exotic. A breakdown of taxa by structural class is presented in Table 1. The list is incomplete because of the timing of the survey and a focus on indigenous species.

The relatively low number of native species present is probably a reflection of the disturbance history (herbicide-spraying, fire, and grazing) of the trail, mostly during its time as an active railway line. The presence of extensive rocky areas within the corridor, buffered from fire and home to species adapted to such an environment, as well as the presence of small wetlands within the trail's corridor, have, however, provided important refuges for native plants.

Table 1: Structural classes of native and exotic taxa recorded

Structural class	Indigenous	Exotic	Total
Gymnosperms	0	2	2
Dicot trees, shrubs and lianes	21	15	36
Dicot herbs	26	48	74
Grasses	9	11	20
Rushes and sedges	10	2	12
Other monocots	5	2	7
Ferns and fern allies	15	0	15
Total	**86**	**80**	**166**

Threatened Plants

Twelve 'threatened' and 'at risk' plants were found (see Table 2) including three ranked as Nationally Critical.

The discovery of the shrub *Carmichaelia curta* was most surprising. This species is known only from the Waitaki Basin, and a small number of sites in Otago. Given its Nationally Critical ranking and rarity in Otago, it is a high priority for conservation management.

The "spring annuals" (*Myosurus minimus* subsp. *novae-zelandiae* and *Ceratocephala pungens*) were found in numerous sites. This season was unusually good for spring annuals in the region, so the number and extent of populations recorded may be exceptional. At some sites, *M. minimus* subsp. *novae-zelandiae* grows on the surface of the trail where we surmised the loose-surfaced, bare ground mimics the open, disturbed areas the species otherwise inhabits. The regular weed spraying the trail surface receives may assist it by reducing competitors because spraying occurs after the plants have shed their seeds and died. *Ceratocephala pungens* was usually found in areas fenced into adjoining grazed paddocks, sites that it often shared with *M. minimus* subsp. *novae-zelandiae.*

Myosurus minimus subsp. *novae-zelandiae* in Rail Trail gravel. Photo: John Barkla

Crassula mataikona is a small fast-growing herb that also requires open, disturbed habitat and which probably completes its life cycle before spraying of the rail-trail begins. Again, this species may benefit from regular spraying of weeds growing on the trail's surface.

The speargrass *Aciphylla subflabellata* occurred at two sites and both records were of plants growing amongst rank grass, with matagouri and desert broom nearby. The larger population of the two appears to be expanding.

Table 2: Threatened taxa recorded, threat rankings, and number of sites on the Otago Central Rail Trail

Taxon	Threat ranking (de Lange et al. 2009)	Number of sites on OCRT
Aciphylla subflabellata	Declining	2
Carmichaelia compacta	Declining	2
Carmichaelia crassicaulis subsp. *crassicaulis*	Declining	2
Carmichaelia curta	Nationally Critical	1
Ceratocephala pungens	Nationally Critical	4
Coprosma intertexta	Relict	1
Crassula mataikona	Naturally Uncommon	3
Elymus tenuis	Declining	1
Muehlenbeckia ephedroides	Declining	1
Myosurus minimus subsp. *novae-zelandiae*	Nationally Critical	11
Olearia lineata	Declining	4
Pleurosorus rutifolius	Naturally Uncommon	5

The shrubs *Carmichaelia crassicaulis* subsp. *crassicaulis* (coral broom), *Coprosma intertexta* and *Olearia lineata* were each found in one to four sites. Coral broom and *C. intertexta* have sizable populations in nearby higher-altitude and less-modified areas; *O. lineata* has small populations scattered throughout Central Otago. They are all attractive species and would be suitable for restoration or amenity plantings along the trail.

The shrub *Carmichaelia compacta* is endemic to the area around the Kawarau, Cromwell and Roxburgh gorges, and the surrounding hill country on exposed rock or rocky soil. A site in the Poolburn Gorge

section of the rail trail may represent the species' northern distributional limit. It was also recorded on the trail just north of Alexandra, on the edge of hills in which it is reasonably common.

The prostrate bluegrass *Elymus tenuis* has previously been recorded from the trail, with a particularly dense patch noted amongst browntop in the vicinity of Hyde.

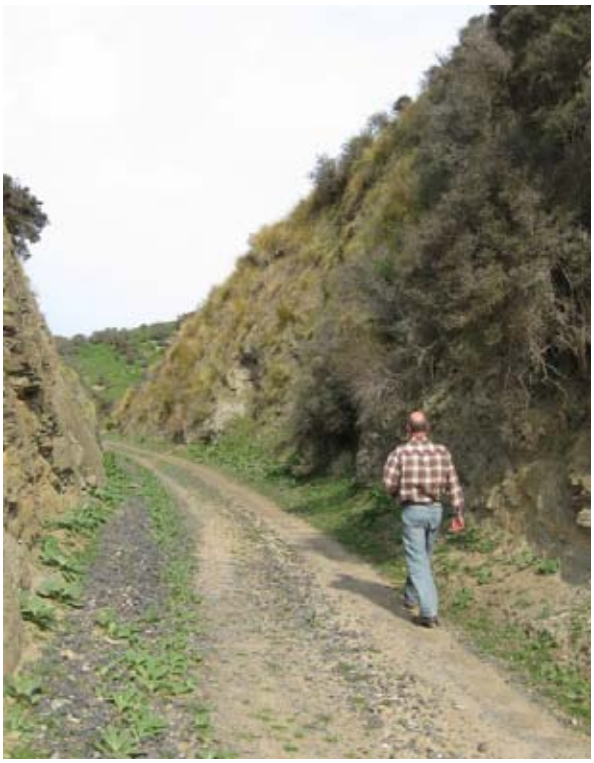
Pleurosorus rutifolius was found just north of Alexandra, growing amongst rocks. This distinctive fern occurs in the North and South Islands, and appears to be locally common around Alexandra. Its rock-crevice niche appears to offer some protection from grazing and habitat loss.

One plant of the sprawling shrub *Muehlenbeckia ephedroides* was found growing at the top of a railway cutting. Elsewhere in Otago, this species has a very localised distribution. It favours open, gravelly sites, and could probably be established at more places along the trail.

Notable communities

Notable plant communities mostly comprised small stands of shrubland dominated by common species such as *Coprosma propinqua*, matagouri and *Muehlenbeckia complexa*. These were generally around tors or other rocky areas, on shaded slopes, or in gullies where streams cross the trail. Rail cuttings, with shady habitat inaccessible to grazing stock, were especially notable for their plant communities, including small stands of snow tussock. These areas show the potential vegetative communities that could exist adjacent to the trail, and provide a contrast to the bare, poorly vegetated ground elsewhere.

Some wetland areas also contained notable plant communities. Though many had willows and rank grass, some had remnant *Carex secta*, toetoe, and orchids. The protection of these wetlands from pastoral activities has left them in a generally better condition than those in adjacent farmland, offering a glimpse of a formerly more widespread community and potential for restoration.



Steep rail cuttings are important plant refuges. Photo: John Barkla.

Exotic plants that may become serious environmental weeds

Exotic broom (*Cytisus scoparius*) arguably presents the greatest threat to existing indigenous plant diversity and abundance. It is especially prevalent on or near the rail trail between Daisy Bank and Middlemarch. Oriental clematis (*Clematis tangutica*) occurs only near Tucker Hill, northeast of Alexandra. This and related exotic *Clematis* species are well known for their spreading characteristics and ecological impacts. Willows (*Salix* spp.) are common along many peripheral waterways and wetlands. Their continued spread poses a risk at those sites with intact indigenous wetland vegetation (e.g. *Carex secta*) and at wetland sites suitable for restoration of indigenous vegetation communities.

Evaluation of previous plantings

The location of plantings appears to have been determined by amenity considerations, for example, at railway stations or near ganger's sheds. These sites tend to have dry, compacted stony soil on flat ground, and are not conducive to shrub establishment. Accordingly, a high failure rate was noted with survival highest at those sites receiving irrigation. A constructed mound at Galloway Station, planted in (mostly) appropriate native species, is a good example of thoughtful and appropriate restoration/beautification with wider application.

Revegetation potential

We identified 16 sites as having particularly suitable attributes for revegetation due to reliable soil moisture throughout the year and proximity to a population centre and/or existing natural/landscape values. These sites are predominantly wetland or riparian habitats and have an existing vegetation cover dominated by rank grass/pasture weeds and willows. Many sites have a soil moisture gradient, making them suitable for a range of species from *Carex secta* to damp-tolerant shrubs such as *Olearia bullata*, through to species able to tolerate drier conditions such as *O. lineata*, *O. odorata*, *C. propinqua*, and native brooms, etc. The establishment of small shrublands may lead to the natural re-colonisation of other suitable areas by native plants, and the creation of habitat for native invertebrates, lizards and birds. Such enclaves of native-dominated wetland and shrubland would have a beneficial advocacy role, showing trail users that many native woody species thrive in Central Otago's climate, and can form diverse communities worthy of restoring and protecting.

Postscript

Following publicity of these findings, additional rail trail threatened and uncommon plant records of *Aciphylla subflabellata*, coral broom, *Carmichaelia curta, C. compacta*, and a new record of *Atriplex buchananii* were received from local botanical enthusiasts. More recently, the threatened plant sites have been permanently marked to enable contractors to recognise and avoid the sites, and visits have been made to adjoining landowners who graze 'spring annual' sites.

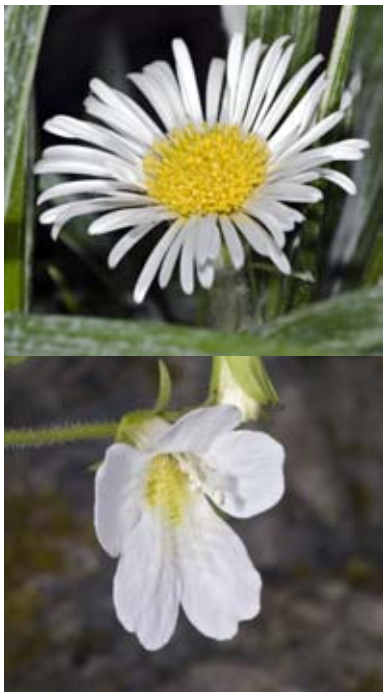
References

de Lange, P.J; Norton, D.A; Courtney, S.P; Heenan, P.B; Barkla, J.W; Cameron, E.K; Hitchmough, R; Townsend, A.J. 2009. Threatened and uncommon plants of New Zealand (2008 revision). *New Zealand Journal of Botany* 47: 61–96.

Announcing the New Zealand Plant Radiation Network and the NZPRN 2009 Conference

What are plant species radiations, and why are they important?

Understanding how global plant biodiversity arose and is maintained requires an understanding of *plant species radiation*—a process of diversification that produces morphologically and ecologically distinct, but genetically similar, species from a single founding population. Species radiations are a feature of many world floras including that of New Zealand. Developing our understanding of species radiation will help us to understand the nature, evolutionary potential and adaptability of our flora to environmental change.



Celmisia spectablilis subsp. *lanceolata* (top) and *Ourisia macrophylla* subsp. *macrophylla*, members of plant groups that have radiated extensively in New Zealand Photos: Jeremy Rolfe.

Research on New Zealand plant species radiations

The well understood geological and climatic record for New Zealand, together with the simple complexity of our flora provides a unique model system to investigate plant evolutionary and ecological processes. Some examples of plant groups that have radiated extensively in New Zealand include *Asplenium, Blechnum, Celmisia, Dracophyllum, Epilobium, Hebe/Veronica, Ourisia, Pachycladon,* and *Ranunculus*, among others. Making the most of opportunities to study and understand these plants requires interdisciplinary research in palynology, morphology, ecology, physiology and studies of genetic variation. It requires the collaboration of biologists, mathematicians, physicists, computer scientists, climatologists and geologists.

It is with this collaborative spirit in mind that we would like to introduce members of the NZPCN to the NZPRN, the New Zealand

Plant Radiation Network. The NZPRN aims to bring together researchers interested in botanical research to promote collaboration and discussion of ideas, methods and projects around several themes, including: delimitation of species boundaries, evolutionary drivers of radiation, impact of climate change on distribution and diversity, reconstructing the evolutionary history of species radiations, the genetic basis of diversification, and evolutionary significance of hybridisation and polyploidy. Check out our website for further details: awcmee.massey.ac.nz/NZPRN/

NZPRN 2009 Conference and Workshop

We will be having our inaugural conference on 17 November 2009 at Lincoln University, Lincoln, where ALL are invited to register to attend. The New Zealand Plant Radiation Network 2009 Conference will be a one day meeting on evolution, systematics, phylogeny, and adaptive radiation in the New Zealand flora. A conference dinner will be held in the evening at 7.00 pm. The cost for the day is $65; this includes lecture room hire, morning and afternoon tea, and lunch.

Following the one-day conference, the NZPRN will also host a one-day workshop at Landcare Research, Lincoln, on 18 November 2009. The focus of this workshop will be to discuss future activities of the NZPRN, and issues and themes for future research in plant evolution, phylogeny, and systematics in New Zealand. The workshop is limited to 40 participants to encourage active discussion and participation by all present. The cost for this day is $40; this includes morning and afternoon tea, and lunch.

To register for the Conference and/or the Workshop, please see the instructions and registration form on our website for more details: awcmee.massey.ac.nz/NZPRN/. The deadline for registration is October 9, 2009.

Please contact Peter Heenan (heenanp@landcareresearch.co.nz) if you would be interested in giving a talk at the conference.

Please direct any queries to Heidi Meudt (heidim@tepapa.govt.nz) or Claudia Voelckel (c.voelckel@massey.ac.nz).

Native plants sure to thrive

Professor Ian Spellerberg, Lincoln University (Ian.Spellerberg@lincoln.ac.nz)

Native plants will have an important role to play in the future and uncertain environment of the Canterbury Plains, writes Ian Spellerberg.

This is Conservation Week (13–20 September) and therefore a time to celebrate and experience New Zealand's native wildlife, natural areas and historic places. It's also perhaps a good time to ask 'what use is conservation?' The answer depends on what is meant by conservation? I suggest that in part it's about conserving what we have left of our natural heritage but also about restoring the historical losses. But why bother? Some would argue that we should be content with what we have left. After all, New Zealand has 14 national parks amounting to about 30% of the land area. That, together with all of the many other kinds of protected areas (terrestrial and aquatic) adds up to a lot in the name of conservation. I believe that we have a moral responsibility to conserve our indigenous wildlife and natural area. There are of course many benefits both in a direct sense and indirectly. In addition, and perhaps not well appreciated, is that native plants can help to weave resilience into working lands.

The native plants and the native plant communities have all but gone from the Canterbury Plains. There is less than 0.5% of native plant cover remaining on the Canterbury plains and downs. Amongst that native plant cover is almost 25% of New Zealand's threatened flowering native plant species. It was once a diverse area with many kinds of habitats with a rich and varied flora. A very good description of what the area looked like is in a small book published by the Department of Conservation ('*Native plant communities of the Canterbury Plains*'). It's available from the Motukarara Conservation Nursery & Resource Centre where there are splendid examples of what native plant communities used to look like on the Plains.

Today, the Plains look clean and green but there is not a native plant to be seen. The landscape is dominated by exotic grasses, gorse, pines, and straight lines of poplars and macrocarpas. Across those geometric patterns of the Canterbury landscape something has been stirring. It started as a few green dots and has been slowly spreading. At first, you would not have noticed but now they are becoming more visible. No, it's not those giant central pivot irrigators that look like skeletons of some ancient dinosaurs. It's less visible but has the potential to bring huge economic benefits to these working lands. Those green dots are the first of the native plantings and they are growing rapidly in number like emeralds in a monotonous landscape.

We are talking about a vast area and a huge project that will take decades to complete. Starting with just a few green dots, it seems inconceivable that it would it be possible to link the few remaining remnants of native plant communities into some kind of ecological network? It's not a new idea because ecological networks and greenways have been popular in North America and in Europe for many years. Ecological networks provide a structure to hold key ecological areas, buffer zones and corridors together. Greenways encompass both the land and the people so that nature is managed in a sustainable manner for future generations. The idea of a greenway fits well with natural, cultural and sustainable ethics. Thus the name Te Ara Kakariki Greenway Canterbury was born. The Project was launched in 2006 at Peacock Springs with the gracious permission of Lady Isaac and the Trust was formed in 2007.

The Greenway needed a visual identity with boundaries. The area chosen for Te Ara Kakariki Greenway Canterbury is that administered by Selwyn District Council. From the mountains to the sea, Selwyn District covers hundreds of thousands of hectares. The Te Ara Kakariki Greenway Canterbury is huge indeed in scale, and possibly the largest community driven native plant project fostering the use of native plants and native plant communities on private (and public)land in New Zealand. That is what this project is all about. It's about fostering (for all reasons) the use of native plants and native plant communities. The project builds on some existing well known conservation and restoration initiatives such as the Banks Peninsula Conservation Trust and Waihora Ellesmere Trust (WET).

The Project has huge implications for the restoration of the equally huge historic losses of our native flora. It also has significant benefits for native wildlife including our native birds. In *The Press* (26 August, A9) there was an article about the orange-fronted parakeet or kakariki. They are found in only three beech-clad Canterbury Valleys and it is estimated there are but 200–400 left on the mainland. That article prompted several letters to the Editor with questions about what else could be done for New Zealand's little green parrots. Given appropriate control of predators and provision of food plants, it is possible that thousands of land owners could take part in Greenway Canterbury and help bring several native bird species back to the Plains.

What else? The objectives of the Trust include providing landowners with access to the resources that they may need, increasing the number of green dots, promoting the benefits of native flora and fauna and ecosystems, engaging with landowners, and reducing the barriers to the use of native plants. It is about using native plants and native plant communities for all kinds of reasons and at all kinds of scales, from small plantings in local gardens to landscapes with native planting throughout the landscape. Potentially, this has huge economic implications that go hand in hand with the sustainable use of the Canterbury lowlands.

Some native plants have potential as shelterbelts and as crops. Native plantings could support beneficial native insects. Native plants add commercial value to properties. The amenity and education uses are diverse. Native plant communities could help alleviate drought and help reduce risks of fire. On a large scale, native trees may be an attractive prospect as carbon sinks. In the context of climate change and an uncertain environmental future for the Plains, native plants and native plant communities will have an increasingly valuable role to play in weaving resilience into the land. Support for this view has previously been advocated by the 2002 publication '*Weaving resilience into our Working Lands: recommendations for future roles of native plants*' published by the Parliamentary Commissioner for the Environment.

Where to from here? The Trust is coordinating information about native planting on both public and private land. This will be free and widely available. The Trust is also coordinating planting projects for public spaces to help with linkages to native plantings on private land. With the generous support of local Copthorne Hotels, native planting sessions have already taken place. The Southern Woods Plant Nursery has provided resources for the Greenway Canterbury schools native plant education project. All schools in the region have been contacted and invited to take part in native plant projects and competitions.

Then there are visions for the future. There could be road and rail corridor native plant projects. There could be riparian native plant projects around rivers and other wetlands. Out there on the Plains we could we have a major native plant education centre that was larger and more diverse than any existing native plant attraction in New Zealand. Such a centre could include a diverse range of educational programmes and activities aimed at all sectors of the community. This could be a major commercial venture and tourist attraction.

The Canterbury Plains are clean and green. A greenway from the Mountains to the sea is a potential icon for Canterbury. I predict that in the not too distant future, this Project will feature prominently in the tourist literature. It is not beyond imagination that tourists will come to New Zealand specifically to experience and celebrate native wildlife, natural areas and historic places (and kakariki) across the Canterbury Plains—and not just during Conservation Week.

(First published in The Press*, Wednesday 16 September; reproduced with permission.)*

Network Annual General Meeting announcement for 2009

The Network's Annual General Meeting will take place in Auckland at the Stardome Observatory (Sunroom) from 7.30 p.m. till 9.00 p.m. on Thursday 12 November 2009. This meeting will include a debate entitled: "What relevance does 'ecosourcing' have for plant conservation?" Guest speakers include Wayne Bennett (Ecosourcing coordinator in the Waikato and Network Award winner), Leon Perrie (Plant Scientist at Te Papa Tongarewa) and Danielle Hancock and Chris Ferkins (Waitakere City Council) and others still to be confirmed. These presentations will be followed by a discussion regarding the setting of national standards for ecosourcing. A new national Council will be elected and the annual plant conservation awards will be presented. We hope that many Network members will be able to attend. To find the venue here is a link to the location: www.stardome.org.nz/contact/locationmap.asp or type the following text into Google maps: "stardome observatory 670 Manukau Rd, Auckland, 1023". For more information, please contact the Network: info@nzpcn.org.nz.

Please RSVP to info@nzpcn.org.nz if you will be attending the AGM (for catering purposes).

New Council members needed

At the AGM in Auckland in November we will be electing officers for our council. Our president, Professor Ian Spellerberg, is stepping down as are several council members. The council is the group that runs the NZPCN. Decisions at council meetings are made about the website, newsletter, conferences and much more. The council meets once or twice a year, often in Wellington, and has regular e-mail communications.

Please think about whether you'd like to be involved. You do not have to be at the council meeting this year to be elected, just let our secretary, John Sawyer, know (jsawyer@doc.govt.nz) asap.

New threatened plants book available soon

The book *Threatened Plants of New Zealand* by Peter de Lange, Peter Heenan, David Norton, Jeremy Rolfe and John Sawyer, published by Canterbury University Press, will become available early in 2010. See the flyer at the back of this newsletter for more information, and watch out in future issues of *Trilepidea* for a discount offer to NZPCN members who order the book in advance of publication.

Network plant conservation awards for 2009

The Network is now calling for nominations for its 2009 Plant Conservation Awards. The nomination form is attached to this newsletter and is also available from the Conservation info/ Awards area of the website. The awards will be made at this year's AGM to be held at the Stardome Observatory in Auckland, from 7.30 to 9.00 pm on Thursday 12 November. There are six categories: Individual, School, Community Group, Plant Nursery, Territorial Local Authority and Young Conservationist.

Please send your nominations with any accompanying information to PO Box 16-102, Wellington or e-mail to info@nzpcn.org.nz or contact us for more information.

Lucy Cranwell student grant for botanical research – call for applications

Applications are invited for the Lucy Cranwell Grant of $2,500 from the Auckland Botanical Society to assist a student studying for the degree of PhD, MSc or BSc (Hons.) in any tertiary institution in New Zealand whose thesis project deals with some aspect of New Zealand's flora and vegetation. Priority will be given to projects relevant to the northern half of the North Island. The research project to be supported will be chosen on the basis of its appropriateness to the objects of the Society, viz., to encourage the study of botany, and to stimulate public interest in the plant life of New Zealand and its preservation, conservation and cultivation. The grant will be administered by the student's supervisor as a contribution to expenses associated with the project.

Closing date for applications: **Wednesday 30 September 2009.** A copy of the Application Form and the Rules of the award may be obtained from: Sandra Jones, email: kemsdale@ihug.co.nz; ph: 09-817 2788.

Botanical Society of Otago 2010 calendar available

Copies of the Society's 2010 calendar are now available; $20 each or two for $36 (please add $2.50 for postage and packaging). For electronic payment, please email: bso@botany.otago.ac.nz with your name and address and payment details will be sent to you. All proceeds go to the Botanical Society of Otago (www.botany.otago.ac.nz).

COMING EVENTS

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

Auckland Botanical Society

Meeting: Wednesday 7 October at 7.30 p.m. the Lucy Cranwell lecture by Professor John Ogden. **Venue**: Unitec School of Natural Sciences Gate 3, Building 023, Room 1018.	**Contact:** Maureen Young (e-mail: youngmaureen@xtra.co.nz).
Field trip: Saturday 17 October the Hauraki Gulf island trip.	**Contact:** Maureen Young (e-mail: youngmaureen@xtra.co.nz).

Waikato Botanical Society

Field trip: Saturday 17 October to Te Māra Reo Language garden and Lake Hakanoa wetland. Dr Richard Benton will show us around his 2ha Ngaruawahia property which has been developed into a "language garden". **Meet:** 9.30 a.m., Landcare Research car park, Gate 10 Silverdale Rd, Hillcrest.	**Contact:** Monica Peters, e-mail: monica.peters@landcare.org.nz, ph: 07 859 3725 (wk), mob 021 049 2036.

Rotorua Botanical Society

Field trip: Sunday 4 October to Wairoa Stream, Woodlands Rd, Kaimai–Mamaku Forest Park, north of Katikati. **Meet:** The car park at 8.00 a.m. or Katikati Town Centre at 9.30 a.m. **Grade:** easy.	**Leader:** Graeme Jane, ph: 07 570-3123 e-mail: gtjane@clear.net.nz.

Wellington Botanical Society

Field trip: Saturday 3 October to the Wainuiomata catchment. Booking essential so that we can advise Greater Wellington staff. **Meet:** 9.00 a.m. sharp at locked gate beyond end of Whitcher Grove off Moores Valley Rd. Allow 45 minutes from Wellington. Ring leaders if you need a lift.	**Co-Leaders:** Chris Horne, ph: 04 475 7025, mobile: 027 474 9300, Barbara Mitcalfe, ph: 04 475 7149.
Field trip: Saturday 10 October for a Te Marua Bush workbee. Bring weeding gear: gloves, kneeler, weed bag, and your favourite weeding tools; e.g. trowel, hand fork, loppers, pruning saw, pinch bar. **Meet:** 9.30 a.m. at Te Marua Bush (250 m north of Te Marua Store and then left, off SH2 for 50 m, along the road to Te Marua Lakes, Kaitoke Regional Park). If coming by train, ring the leader to arrange to be met at Upper Hutt Station. Catch 8.05 a.m. train on Hutt line from Wellington Station.	**Co-Leaders:** Glennis Sheppard, ph: 04 526 7450, Sue Millar, ph: 04 526 7440.

Nelson Botanical Society

Field Trip: Sunday 18 October to the native gardens of a number of botanical society members. **Meet**: 9.00 a.m. at Nelson Cathedral.	**Contact:** Richard Brown ph: 03 469 922 for details.
Field trip: 23-26 October, the Labour Weekend Camp to Kaihoka Lakes-Westhaven Inlet.	**Contact:** Shannel Courtney e-mail: scourtney@doc.govt.nz, for details.
Field trip: Sunday 15 November to a privately covenanted, lowland, hill country beech forest in the Wangapeka catchment.	**Contact:** Sally Warren ph: 03 546 6637 for details.

Canterbury Botanical Society

Meeting: Friday 2 October at 7.30 p.m. a talk by Ryan Young titled "Natives close up, Canterbury alpine plants" and Alwyn Williams, a student talk on *Podocarpus hallii* research project.	**Venue:** Room A5 University of Canterbury.
Field trip: Saturday 10 October to Church Bay – native and exotic vegetation.	**Contact:** Bryony Macmillan ph: 351 2886 or 351 9241 (for messages).
Show Weekend Camp 2009: 13–15 November, South-Eastern Bays, Banks Peninsula.	**Contact:** Gillian Giller, ph: 03 313 5315, for further information.
Summer Camp 2010: 15–22 January at the Glen Mary Ski Club, Lake Ohau.	**Contact:** Gillian Giller, ph: 03 313 5315, for bookings or further information.

Botanical Society of Otago

Meeting: Wednesday 14 October at 5.20 p.m. a talk by Dr David Orlovich titled "Beech forest fungi". Venue: the Zoology Benham Building, 346 Great King Street, behind the Zoology car park by the Captain Cook Hotel. Use the main entrance of the Benham Building to get in and go to the Benham Seminar Room, Rm. 215, 2nd floor. Please be prompt as we have to hold the door open.	**Contact:** David Orlovich, ph: 03 479 9060.
Field Trip: Saturday 17 October to Blueskin Farm. Leave from Botany car park at 9.00 a.m. or at 156 Manse Road at 9:30 a.m.	**Contact:** Kelvin Lloyd, ph: 03 473 9566.

NZ Plant Radiation Network

Inaugural conference: 17 November 2009 at Lincoln University, Lincoln. ALL are invited to register to attend. The one-day conference will discuss evolution, systematics, phylogeny, and adaptive radiation in the New Zealand flora. A conference dinner will be held in the evening at 7.00 p.m. Cost $65; includes lecture room hire, morning and afternoon tea, and lunch.	**Instructions and registration form:** awcmee.massey.ac.nz/NZPRN/. The deadline for registration is 9 October 2009.
Workshop: 18 November 2009 at Landcare Research, Lincoln. Discuss future activities of the NZPRN, and issues and themes for future research in plant evolution, phylogeny, and systematics in New Zealand. Limited to 40 participants to encourage active discussion and participation by all present. Cost $40; includes morning and afternoon tea, and lunch.	**Contact:** Peter Heenan (heenanp@landcareresearch.co.nz) if you would be interested in giving a talk at the conference. **Enquiries:** Heidi Meudt (heidim@tepapa.govt.nz) or Claudia Voelckel (c.voelckel@massey.ac.nz).

Island Invasives Conference

This conference is being held in Auckland, in February 2010. Registrations are now open. See: www.cbb.org.nz/conferences.asp to read the updated information and proceed to the payments page. If you are considering presentation of a paper, the deadline for abstracts is 31 August. Details about abstracts and papers are on the web page and files attached to it. Please pass this information on to as many people as possible.	**Conference Manager:** Dick Veitch email: dveitch@kiwilink.co.nz.

4th National Wetland Restoration Symposium

The symposium will held in Rotorua on March 3-5, 2010. The theme is: "Wetland Management and Restoration (Freshwater and Estuarine)". Online registration: www.wetlandtrust.org.nz; earlybird registrations opened 1 June 2009.	**Contact:** National Wetlands Symposium 2010, The Organiser, ph: 07 343 1732, email: theorganiser@RotoruaNZ.com.

NEW ZEALAND PLANT CONSERVATION NETWORK
PLANT CONSERVATION AWARDS: 2009

The New Zealand Plant Conservation Network is now accepting nominations for the 2009 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 at 30th June 2009)

More information about the awards scheme and additional nomination forms are available on the Network website - see www.nzpcn.org.nz. You can make multiple nominations under different categories. Everyone is eligible to make nominations, not just Network members. The awards will be made at the Network Annual General Meeting to be held on Thursday 12 November 2009 from 7-9.30pm in the Sunroom at the Stardome Observatory in Auckland. See the Network newsletter or website for more information.

NOMINATION FORM

Category (please circle):

Individual Plant nursery Young Conservationist

School Community Local Authority

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 Wednesday 4 November 2009 TO:

New Zealand Plant Conservation Network
P.O. Box 16-102
Wellington
New Zealand
Email: info@nzpcn.org.nz
www.nzpcn.org.nz

canterbury university press

Threatened Plants of New Zealand

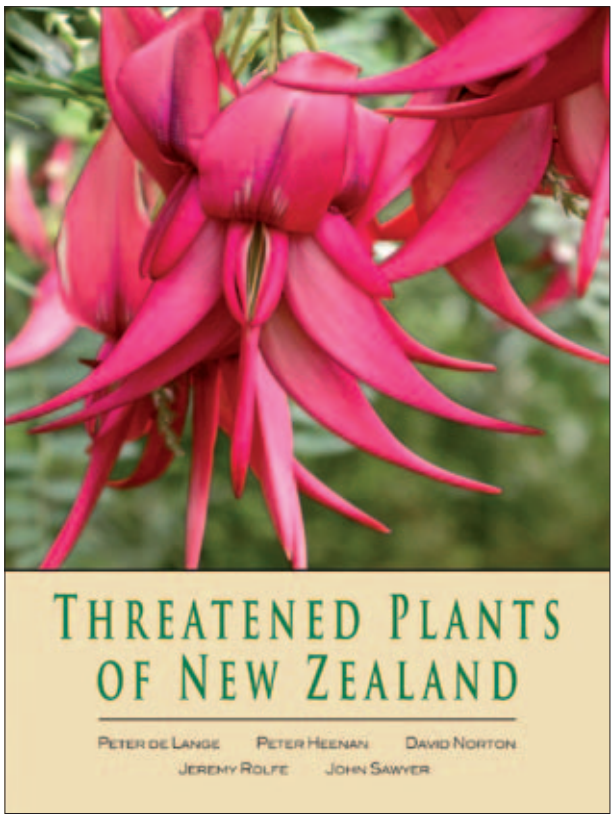
Peter de Lange, Peter Heenan,
David Norton, Jeremy Rolfe & John Sawyer

One in 13 of New Zealand's native plants is now threatened with extinction. Six species are already extinct – like the moa and the huia, they are gone forever. Even the popular kakabeak (*Clianthus puniceus*) is in a serious plight, with just one plant left in the wild. Another 24 species are known in the wild from fewer than 200 plants.

This beautifully illustrated book combines precise botanical descriptions with lavish illustrations in describing the 189 species defined by conservation scientists as Extinct or Threatened, using the New Zealand Threat Classification System. Each description contains information on how to identify the plant in question, the specific threats it faces, and its current distribution.

Threatened Plants of New Zealand is designed to be an essential tool in the fight against extinction, as well as a stunning showcase of the spectacular flora of a country in which new plant species are still being routinely recognised, 240 years after the first specimens were brought to the attention of the world's scientific community.

This book is an initiative of the New Zealand Plant Conservation Network: www.nzpcn.org.nz.



December 2009, $99.95
Hardback, 500pp (approx), 195 x 260mm
ISBN 978-1-877257-56-8
Category: NZ Botany/plant ecology
Market: Botanists, ecologists, general

Peter de Lange is a threatened plant scientist with the Department of Conservation, focusing on taxonomy, genetics, ecology and threat classification systems.

Peter Heenan is a plant taxonomist with Landcare Research, and has served on the New Zealand Threatened Plant Panel since 1999.

David Norton is a botanist and ecologist who heads the Rural Ecology Research Group in the NZ School of Forestry at the University of Canterbury.

Jeremy Rolfe is a botanical photographer who has worked at the Department of Conservation since its inception in 1987, working mainly on interpreting the natural sciences to the public.

John Sawyer is a plant ecologist who has worked for the Department of Conservation for 16 years, focusing on the conservation of threatened plants.

Between them, they have published over 400 journal articles, and written a number of books.

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