

Appendices

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Feel For The Land

by Chris Ferkins

It is fascinating how our understanding of the native plants of New Zealand has developed in the last decade. There is now a real pride apparent and the interest in using native plants has grown with it. Rural and urban communities now gain some real benefits to the environments in which they live, but the interest can also pose some challenges.

In her book *The Native Garden*, author Isobel Gabites traces and comments on developments in the use and appreciation of the New Zealand landscape, its shapes, its feel and its plants. Her words give a context to current responses to the land and the interest people have in native plants. She starts with immigrants arriving in a new land and slowly coming to make the place home; the uses and benefits people make of the landscape followed by the trend to bring plants from the landscape into a garden. Familiarity with our native plants can be gained in this way. And familiarity allows us to see more when we visit them in the wild. One aspect of particular beauty we can observe in the wild is the way different species mix, forming homes for themselves and New Zealand's wildlife.

So, what interest do people have in native plants? In my work for Waitakere City Council, I am a key contributor to the Green Network Community Assistance Programme that makes staff expertise and council resources available to encourage and support private landowners throughout the City. It is there to help them achieve their environmental goals, whether that is a stream-side restoration, controlling noxious weeds, or developing a conservation covenant to protect their bush. The programme is available whether they are an urban resident, a farmer or a bush property resident in the Waitakere Ranges. What I encounter day after day is people putting in so much work. These people are keen. Sometimes groups form and people help out on each other's backyards. Nature knows nothing of our property boundaries. Healthy land next door is a benefit to everyone that surrounds it.

Three years ago there were seven conservation groups in Waitakere. Today there are over 40 and most of these people would not see themselves as conservationists, they are residents caring for and looking after the environment in which they live. And such interest is not only in Waitakere. I am certain of that!

But where do these people get their information, and what information do they need to get in order to work on their projects? This is my challenge to the garden industry. If people are going to be enabled to look after their environment they need to know more than the size of the plant and the colour of its flowers.

They need to know:

- What would naturally grow in that spot?
- What other plants or wildlife will it help be a home to?
- What combinations of plants should I put together to keep the weeds out, trap the silt or stabilise the bank to improve the quality of my stream?
- How can the plants I plant contribute to the health of the rest of the bush in my neighbourhood?

One part of the answer is to make sure the plants are ecosourced.

Conservation has for years been such an elusive thing, done out there by those lucky enough to get involved. It need not be - a huge proportion of New Zealand's residents have access to a space, indeed have the control of a space where very meaningful conservation benefiting activities can take place. We call it the 'backyard'. Using ecosourced plants is one of those activities that can contribute quite significantly, and it is a very definite conservation activity that can be implemented in the backyard.

As you will see in the discussion section of the Code of Practice, ecosourced labelled plants are now available in participating garden centres in Waitakere. Other parts of the country have been working on making ecosourced plants available too, especially Christchurch. Commendations and good luck to all involved.

Gabites (1998) hopes her book "will inspire you to find meaning in the wilderness of New Zealand".

I hope so too, and with the help of having locally sourced native plants available, I encourage people to do something in their own backyard that serves both as a place for them to live and as a place that the environment of the neighbourhood benefits from.

I also commend Isobel on her book, Rob Lucas on his photos and Random House NZ who published it. Have a look at the book *The Native Garden*, let the images (both word and photo) inspire you and let the awesome work (and enjoyment) by so many, continue.



In his paper *Sustaining Biodiversity Through The Use Of Local Plant Provenances*, Philip Simpson draws our attention to the issue of ecosourcing or ecology being just one element of sustainability, the others being Economic, Social and Cultural. He draws an interesting picture of how plants are embedded in all of these. If that is hard to see, Isobel Gabites picks up the theme too, of the effect plants of this country have had on nearly all of us. Does that sound too grand.....

'Seeking The Heart And Soul

Maori have a custom of burying the placenta of a newly born child and planting a tree over it. It is an act of love and a symbol of that culture's relationship with the land. Perhaps for some it is the first sense of a 'garden' – a special space on the planet to be claimed as their own, to be cherished, returned to and respected by their descendants.

Gardens are integral to Polynesian culture. Of the tropical plants the first central Polynesian migration canoes brought to New Zealand, however, only a few would survive the harsher, seasonal climate, and then only with an intensive gardening effort.

The early New Zealanders found, through a mixture of trial and error as well as experience of similar species growing in their Polynesian homelands, that the native bush could supplement their diet. Wild fruits such as kiekie (*Freycinetia banksii*), the berries of hinau (*Elaeocarpus dentatus*) and poroporo (*Solanum aviculare*), tawa (*Beilschmiedia tawa*) kernels and the heads of raupo (*Typha orientalis*), which yielded the pollen that was made into small cakes, could be gathered seasonally.

If the introduced sweet potato, or kumara, could not be grown in quantity, there was always bracken roots; 'The only motive which could induce the New Zealanders to make this path, appeared to be the abundance of ferns towards the summit of the mountain, the roots of that plant being an article of their diet. The steepest part of the path was cut in steps paved with shingle or slate' (George Forster, 1777). Burning scrub to induce bracken growth was a step towards cultivating native species.

Variations in New Zealand flax were selected and grown for qualities such as length of leaf and fibre for weaving. Cabbage tree (*Cordyline australis*) was also grown for supply in the South Island, planted as a living rations depot along major walking routes. Not only were the stem and root eaten, but the leaves of cabbage tree provided useful fibre, surpassing even flax for its durability, supplying the raw material for all kinds of articles, from fishing nets to footwear.

There is not much evidence of other native plants being gardened, or even gardens grown simply for enjoyment, although the first European settlers noted that kakabeak (*Clianthus puniceus*), with its glamorous red pendant flowers, was often associated with Maori villages. Colenso recorded striped flax in some North Island settlements in 1868, and Cook's crew described the ornamental use of gourd plants around dwellings.

As those early generations of New Zealanders came to understand more about the lives of native plants, however, certain trees, such as the tenacious, vicid-flowering pohutukawa (*Metrosideros excelsa*), and puriri (*Vitex lucens*), became imbued with such respect that they were used as tapu trees, planted to mark significant sites and special events.

A garden grown for pleasure anywhere in the world is likely to contain symbolic plantings such as these, reflecting the cultural roots of its creator. Thus it was that when colonial settlers arrived in New Zealand from Europe, finding our flora exotic and strange, they incorporated native plants into garden settings not only as curiosities but because some trees (especially those with rounded, spreading crowns, such as Totara, puriri, titoki (*Alectryon excelsus*) and matai (*Prumnopitys taxifolia*) looked similar to trees in the pastoral landscapes of their homeland that they were keen to emulate here.

Europeans also brought with them a sensitivity to create beauty in their surroundings and this influenced the way they carved new gardens out of a wild landscape. Many of the sheep stations retained stands of mature trees near their homesteads. These were not only as windbreaks and woodlots but to provide a backdrop to the house that was a sanctum, with bush paths made for the enjoyment of the sheer tranquillity of the forest.

Admittedly, nikau palms (*Rhopalostylis sapida*) and cabbage trees featured in many settler gardens simply because they had been resistant to clearance fires, but many settlers made a conscious effort to retain other vestiges of the vanquished forest on their properties. Henry Chapman of Karori was one of those English colonists who selectively cleared his property, creating beautiful vistas of pleasant pastoral scenery dotted with native specimen trees. He wrote to his father in London: 'All the underwood is cleared except some beautiful tree ferns. We take tea under this grove in summer with beautiful views before us. In front of the section I have preserved a fine grove in the same way.'

During the Victorian era a gradual merging of science and gardening gave lay people a greater interest in botany and collections of native specimens (ferns were a favourite subject); thus through the fashionable interests of the day the native flora was absorbed into the new settlers' culture. Unfortunately, fern collecting was achieved by raiding the bush rather than by propagation, and plants were dispersed far and wide. Henry Chapman writes to his father that his wife Kate was 'delighted to find that her ferns please you. She will make up another parcel of other sorts and send them by some opportunity.'

The early decades of the twentieth century saw the strengthening of a culture independent of Europe -- a pakeha culture - as the New Zealand-born descendants of colonists matured. A sense of nationalism gave us the silver fern emblem, but the focus of kiwi spirit, one that arose largely from fighting together in two world wars and recovering from the losses incurred there, was on the health and happiness of the family. Outdoor pursuits such as gardening became a way of life for many families, boosting the popularity of flowers and vegetable gardens, which could keep homeowners endlessly and energetically employed. If there was interest in planting native species, it now incorporated a sense of kiwi identity, favouring icons of the New Zealand landscape -- flax, cabbage tree, tree fern, manuka and toetoe.

By the 1960s and 1970s there was no longer any hint of tokenism. Landscape designers nationwide were using native plants as a matter of course, so much so that plants were being chosen for their forms and textures as much as for their nativeness. An obsession with garden cultivars of native plants reached fever pitch, driven by a culture that was proud to show that native plants (albeit fashionably manipulated ones) were, after all, worthy garden subjects.

This was in the suburban garden scene, but another scene was happening in Godzone in the 1970s, one which may have had a more profound and long term influence on our appreciation of native plants. We dropped out, we opted out, we went back to the land, we potted and wove and baked bread and got back in touch with mother nature in droves. Cheap land that could only support native scrub suddenly became desirable real estate. For a change it wasn't just the scientists arguing the benefits of ecosystem protection but everyday landowners. In the newly formed Commission for the Environment a new phrase entered policy-speak: 'non-use is a use'. Little pockets of private land around New Zealand found owners who cared and healed and nurtured.

Around them, however, natural New Zealand was in serious decline. On the one hand, new National Parks were being formed, on the other hand, government policy stated all other forest should be available for forestry. Through the sixties and seventies the industry boomed, extracting native timber and replacing tracts with exotic species. By 1980 the area of New Zealand left in indigenous forest had dwindled from its estimated pre-settlement peak of 78 percent down to 23 per cent. The ravages of deer, goats and possums called into question the viability of New Zealand's native forests.'

(From *Seeking The Heart & Soul, Chapter 1, The Native Garden, Gabites 1998*)

The New Zealand landscape and the plants it nurtures are very special. It began with 'sediments that make up much of New Zealand's bedrock (which) have their origins on the ancient Gondwanaland continent. The surface of New Zealand that was exposed to sun and rain in Gondwanaland supported all kinds of life – plants, dinosaurs, insects, and birds – which stayed with that landmass as it slowly parted from the mother continent.

Since then New Zealand has been uplifted, eroded down, tectonically crumpled and erupted, has experienced tropical climates and ice ages. The rate of speciation (the development of many species from one distinct ancestor) is high because through all these fluctuations a great range of environments has been available. In particular, the numerous islands created by rising sea levels gave species the chance to develop individual features in isolation. Nevertheless, New Zealand's vegetation still includes some of those ancient Gondwana species (rimu (*Dacrydium cupressinum*), kahikatea (*Dacrycarpus dacrydiodes*), kauri (*Agathis australis*), for example) which have hung on relatively untouched by the changes occurring around them. Gathered together, they impart an ancient character that has long since disappeared from other countries.

These are the circumstances that have made New Zealand's plant species famous worldwide, and 85 percent of our species, whether they be ancient or modern, occur nowhere else.' (Gabites, 1998)

All this has resulted in the New Zealand landscape having huge variety, with each local variation in the plants and plant communities taking advantage of local permutations and combinations of circumstances.

Philip Simpson and Isobel Gabites both talk about this. It is what lies at the heart of the need for ecosourcing.

'In the course of a day's drive through this country we can pass through lush subtropical forest, manuka scrub lands, alpine meadows, vast tussock lands and stately podocarp forests. Look out a window on a Northland cliff-top and your view might be out to sea through the branches of an old pohutukawa leaning precariously over the cliff edge. The clumps of astelia weighing down its old limbs catch the light, glinting silver like the waves beyond. The local kingfisher perches briefly on a branch before disappearing into its burrow in the crumbly bank.

Six hours drive away the view could be of the last rays of sun, trapped before the line of approaching storm cloud, as they illuminate the tussock into a golden band

across the low-lying hills. Down in the creek bed the toetoe heads are beginning to buck and toss in the wind, sending the flocks of finches scattering.

There is always a particular combination of landform, vegetation and sky we can claim as our own and which brands us differently from the rest of the country. Having such contrasts of landscape strengthens a New Zealander's sense of parochial identity. To deny such landscapes would be a shame, for they give the country its moods and personality.

How can we fail to celebrate the incredible diversity from one end of the country to the other which nature hands us on a platter to play with in our gardens? Yet, I often visit cultivated parks and gardens and find myself thinking I could be anywhere in New Zealand or, for that matter, anywhere in the world – where's the local character gone?

In an otherwise temperate Pacific country, it is the high and cold mountain ranges, forcing prevailing winds to dump rain to their west and creating rain shadows to their east, which give New Zealand its complicated patchwork of landscapes. Without the mountains there would be little natural grassland. There would be much less of the dense, wet kahikatea forest and pakihi swamp of the South Island's West Coast.

On an even smaller scale it is still the physical and climatic features that give rise to an array of distinctive plant communities. All sorts of features contribute, which is what makes local landscape an important concept in New Zealand. For example, given a cursory look at conditions in the wet foothills of Mt Taranaki on the west coast of the North Island and the wet foothills of South Westland, one might conclude that the forest composition would be similar. And it is – rainforest as you would expect, dominated by tall rata and podocarps – but within that general framework factors of latitude, different origins for the soil and various barriers to plant dispersal around the country come into play. The king fern, *Marattia salicina*, is only in the north, where it gives the forest a special character; the deciduous ribbonwood, *Hoheria glabrata*, is a common coloniser of slips in the south but absent in the north. And beech trees are completely absent from Taranaki by virtue of some mystery barrier to their dispersal in our dim past.

So even where the physical and climatic features of two areas are similar we cannot expect the patterns of life they support to be the same, and this is partly because those patterns are not just three-dimensional; they are four-dimensional. The way soils weather over time, the way species evolve in isolation, a species' ability to disperse across the land and, now, the way the land has been settled – all bring their effects to bear on the landscape. As a result scientists recognise 85 ecological regions within New Zealand, each with its own distinctive identity; each with its own set of circumstances affecting wildlife and plant communities.

Even a basic understanding of your own ecological region should help you identify the ingredients important to your garden recipe – it will help you plant sympathetically to the local character or select species with confidence that suit local conditions.

It might be the droughts of stony soils, the heat of the sun, the drying of the wind, the weight of snow, the boggy ground or the frequency of frosts that constrains life in your area. One plant will have a greater tolerance of these tough conditions than another plant. Coincidence or careful evolutionary planning? It is not for us to speculate here. We can, however, recognise the groups of plants that

share similar limits. Plants are dictated to primarily by temperature, moisture availability and nutrient availability. These factors can limit growth perhaps through direct damage to tissue (such as frost damage to growing shoots), through effects on seed germination or maybe by slowing growth so much that plants better suited to the conditions can take over.

There is a vast array of adaptations to help plants cope with these stresses. Many high-country herbs, for example, flower very early in the season to ensure seed sets before growth slows during the cold months. Some even start to form buds in summer ready for next season's flowering and in this way can rapidly reproduce successfully in the short alpine growing season. Windy-site plants need to conserve moisture and do this either by rolling their leaves (like tussock) or creating a furry windbreak on their leaves (like many celmisias and olearias). Where salt is an added ingredient, plants may be protected from salt burn by having fleshy, sap-filled leaves with waxy coatings.

Plants that grow in swampy sites will have developed ways of maximising oxygen levels around their roots; through shallow, spreading root systems (like flax, gunneras or sedges); roots that can 'breathe' above ground level, like those of pukatea or mangrove trees; or large oxygen-filled cells in their stems that supply the roots. These are some of the direct responses of plants to physical difficulties and, obviously, similarly adapted plants will be grouped together in those extreme conditions (we ignore this in gardens at our peril).

Again and again we find it is communities of plants, not the individual species, which dominate our perception of a region. Those communities have come about, we discover, as a consequence of both the natural history and the social history of the country.

Be warned: delving into your local ecology could become the fascinating and absorbing, hobby of a lifetime!

(From Celebrating Local Character, Chapter 2, The Native Garden, Gabites 1998)

Isobel Gabites (1998) and Philip Simpson (2001) create a compelling picture of the values and intricacies of the small and large natural areas that surround us. These are the same intricacies that drive the need to ecosource and that give New Zealand so much character. The same intricacies provide us, the nursery owner, the landscaper or the tramper with the resources for our livelihood and the enjoyment of a lifetime. Where is the closest natural area to here? And to think – so much potential to be had from the backyard!

Bibliography:

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