Forty-two years of wild gardening

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In 1980 Miles and I got the spades out and started to establish a wide band of native plants in a bare paddock near Woodend. The original mosaic of forests and swamps associated with the lower reaches of the Ashley River / Rakahuri in this area had been cleared many decades ago. Only a few natives persisted, mainly along the streams. In neighbouring properties there were significant plantings of exotic hardwoods and conifers that were more than a century old.

The aim was to have a relatively easy-care planting once it had established. We didn't want to be restricted to a palette of native species originally found growing on similar soils in the locality. There was no point in fighting our desire to garden so we chose to branch out a bit. We decided to try to create a wild garden that respected and endeavoured to mimic the patterns and successional processes found in plant communities. Three broad communities were envisaged – beech, podocarp and successional. Superficially these communities might look natural even if the species selected would not exactly mirror those found in healthy remnant populations. If all went according to plan, our existing horticultural experience in cultivating plants would help us achieve the desired outcome – an increasing range of plants flourishing from ground level to tree top. In time birds and invertebrates would hopefully frequent the planting. Maybe some lichens, mosses and fungi would establish. Dreams are free and we were young.

It was the commencement of an interesting and mostly enjoyable process that has been more challenging than I ever imagined it would be. It has taught me and continues to teach me so much.

Over the years the garden has been inundated by rain events, blasted by strong hot and cold winds, burnt by frosts in winter and late spring, scorched by summer sun, stressed by low rainfall, broken by dumps of wet snow, chomped on by grass grub larvae and beetles, clipped off neatly by hares, and chewed by rats. We have not had to contend with wild deer or pigs and the weed burden has been relatively light. Being a private garden, we did not suffer the unfortunate impacts of public access that occur in so many public places. When things didn't go to plan, the mistakes were ours to own and ours to learn from.

In the first few years, at the end of each winter, we looked despairingly at the garden and asked ourselves whether perhaps we should just let the sheep graze the area instead. There were so many other things that required our resources. Then, as the spring growth started to clothe the rather beaten looking plants, we took on board nature's lessons and carried on with amended plans. We realised that even though the short term failures were disheartening, in the longer term it would be these dynamic stress and disturbance processes that would help to create successional opportunities and determine what survived. It was helpful and reassuring at this time to have the opportunity to visit a nearby native garden established on drier soils. These visits reinforced the need for a management approach tailored to our site.

The initial plantings had the toughest time establishing. Planting stock with a stout root collar diameter resulted in better survival rates. In spite of knowing that patience was required, we still pushed the boundaries a bit with species selection to see what we could get away with. Inevitably some species died because of this approach. Of interest were the species that survived and appeared to be ok. It was only when we planted the same species

later, when more shelter was available, and observed their increased growth rate that we realised we hadn't gained anything by trying to plant those species earlier in the successional process. There was a limit to how much we could manipulate and speed up succession.

Hares were a problem but there were no short squat plastic plant shelters available. We weren't overly keen about introducing a lot of plastic into the garden anyway. Instead we used a short wire netting ring placed around many plants to ward off the hares. Once the plants were a bit bigger, the wire rings were taken off and placed on the more recent plantings. Forty years on we have lost count of the number of times those wire rings have been used. Some are still being used in other parts of the garden to deflect the occasional passing hare, while others have simply rusted away.

We did a couple of things in an effort to make the garden look more natural. The spacing was varied between the plants that were going to dominate in the longer term. A few groupings with 4-6 trees of the same species were planted at metre or closer spacing. Native and exotic logs and stumps were brought in to help create a bush ambience. In the short term they provided a microclimate for some plantings, and mulch as they decayed. Some logs and stumps still remain, including the native ones we obtained from an area being subdivided in Woodend. Excavation had uncovered wood from a range of species that had long ago been buried by the Ashley River / Rakahuri. The kānuka stumps had developed several whorls of roots up the trunk in response to multiple flood events partially burying them when they were alive.

When the beech, kānuka and podocarps were planted, we often placed a small leaved coprosma in the same hole to function as a nurse companion. Visitors were heard mumbling something along the lines of "a crafty ploy to avoid digging two holes". The extra shelter provided by the dense tangled coprosmas reduced the damaging effect of frost on their more tender companion, and also provided another defence mechanism against hare damage.

Many of the early plantings involved digging up small seedlings from natural populations where there had been abundant germination. A small divot of soil and litter often remained attached to the seedlings. At that stage we were not aware of the importance or complexity of mycorrhizal associations but it is possible that we unwittingly introduced some. We don't know which mycorrhizal associations were present initially in our garden or which ones we introduced. Our gardening activities have probably created a microbial melange, which could have had a beneficial and/or detrimental effect on the plantings.

The original karamu (*Coprosma robusta*) nurse plants lasted 25-30 years before senescing. The last of them lie as rotted trunks on the ground. There are still karamu seedlings but they are now a minor component. From about year five to ten, in each spring, we made sure that the emergent species were not being overtopped by the nurse species. We were manipulating to optimise the successional process. The theory was that once the emergent species had their heads above the nurse, they would require minimal future management.

We also planted kōhūhū (*Pittosporum tenuifolium*) as a nurse but removed most of them fairly soon when we realised they were acting as a handbrake to any other species nearby and to any subsequent regeneration. Mānatu (*Plagianthus regius*) also tended to be competitive, so we planted these in small numbers.

Tī kōuka (*Cordyline australis*) were a mixed blessing. They were tough and fast growing on our site but they also covered the ground with a layer of leaves that buried any other plant trying to establish next to them. We knew that the leaves and lawnmowers were not a good mix and made sure this species did not overhang the lawn area. A few metres back there

was one tī kōuka that we felt by year fifteen had served its purpose as a gap-filler. This species was well represented elsewhere in the garden. The chainsaw was sharpened. When the tī kōuka was felled its top landed with a thump on the nearby lawn. I still have a vivid mental image of numerous rodents fleeing in all directions. Unbeknownst to us the tightly packed dead leaves in the crown had provided a perfectly thatched dry home. We inspected other tī kōuka retaining dead leaves in their crowns and found evidence of additional 'apartments'. We have also seen blackbird and thrush nests repurposed by rats – all that is required is the addition of a roof. We realised that rats are very agile and spend a lot of time in the canopy. Our ongoing trapping keeps the population down but not out.

An area of harakeke (*Phormium tenax*) thrived for many years but eventually collapsed due to shading. It served a useful function as a grass suppressor and food source. It also provided a wild play area for our children. The harakeke's legacy has been a layer of wonderful organic matter for the subsequent plants. Short-lived toetoe have also provided organic matter.

A litter layer full of feeding roots has built up over the years. We avoided spreading thick layers of mulch on our heavy silt loam as we had learned elsewhere that it would have made the soil become anaerobic and lose its structure. We settled on a management system of release spraying around individual plants in the spring to reduce competition for water from grasses throughout the summer. The grass in between plants was left unsprayed and by autumn it had grown back into the sprayed circles. We wanted to maximise the root mass in the soil throughout the winter. As the plants grew together the grass was gradually shaded out.

After some issues in the initial years with frost shatter of the trunks, the kānuka grew well and formed a dense stand with nothing else able to grow underneath. I have always loved mature kānuka stands with their associated emergents and understorey of small-leaved shrubs. Upon reading that it can take 50-60 years before a stand will naturally start to thin, I decided to dabble with a 21 inch bowsaw to see if I could shed more light on the matter. An understorey exists now as a result of a mix of planting and recruitment.

Māhoe (*Melicytus ramiflorus*), which at first could not survive the winters, is now seeding freely. Makomako (*Aristotelia serrata*) only just survived the initial winters but then as the canopy closed, it thrived and grew vigorously, even outpacing the podocarps' growth rates for a few years before dying. Now makomako is present in lower numbers, just waiting for a gap in the canopy.

To extend the range of site opportunities for plants, 50 cubic metres of unsorted shingle from the Ashley River / Rakahuri was trucked in and dumped. The alpines we had envisaged did not persist so plan B was adopted and riverbed species were established. With no flood events to sweep this "river bed" clean, the organic matter built up. Today the raoulia and associated species that initially established have been consumed by an array of coprosma, corokia, olearia, melicytus, hebe, griselinia and moss species (Fig. 1 & Fig. 2, p. 49).

An area of nearby lawn has become a repository for some herbaceous plants that can survive a mowing regime. *Leptinella squalida, L. pusilla, Dichondra repens, D. brevifolia, Centella uniflora, Mentha cunninghamii, Leptostigma setulosum, Mazus novaezeelandiae* subsp. *impolitus, Geranium brevicaule, Hydrocotyle moschata, Lobelia angulata* and *Argentina anserina* have all found suitable niches. Somehow, the managed lawn seems to complement the rambling garden.

Figure 1. The unsorted shingle brought in from the Ashley River / Rakahuri being colonised by raoulia and shrubs in 1989.

Figure 2. The shingle mound photographed in 1989 (Fig. 1, above) seen this time in winter 2022 with our forest trees in the background.

In the last few years some of the established black beeches have died. The trunks of these trees broke at the base when they toppled. We have left most of them where they fell. Perhaps competition is thinning out our planting to a more sustainable level and the balance of the beech will survive at a much lower density. They have grown well on the better-drained parts of our heavy soil and at 21 m are the tallest trees in the planting. However, they will not persist in the longer term without recruitment. It is not a promising sign that the beech have flowered and set viable seed in some years but there has never been any recruitment into areas where we expected to see seedlings. Maybe after 40 years nature is telling us that beech are not sustainable on our site. The open spots with fallen trunks will always provide an opportunity for other species.

There are many birds in the garden. The blackbirds and thrushes constantly turn over the litter layer and destroy many seedlings in the process. Riroriro are always present but pīwakawaka tend to be more seasonal. Tauhou pass through in flocks searching for ripe fruit and usually knock half of it on the ground in the process. Korimako stay for a few days or sometimes a bit longer, and then move on. Skinks hang out in the *Melicytus alpinus* beside the garage. There are plenty of invertebrates but we have not compiled a species list. Stick insects were first observed about ten years ago. Perhaps some invertebrates came inadvertently with the bush logs and stumps we added to the planting.

We look to the south from our house and see the results of four decades of planting natives. There are tall trees and a wonderful array of small-leaved plants, which help to provide the walls of the garden. Behind these walls the sub-canopy and groundcover plants are able to grow and recruitment is happening (Fig. 3 & Fig. 4, p. 51). The spades now spend most of their time hanging on hooks in the shed.

The kahikatea are just about as tall as the beech. Several other tree species have grown well. Recent measurements of the approximate maximum height of these species, their diameter at breast height (DBH), and their recruitment characteristics are shown (Table 1, p. 52). All these species have grown up through a nurse, even though some could have grown with a lesser degree of shelter. The kānuka are multi-trunked because of exposure to heavy frosting when they were young.

Even though it was never our intention to create a planting that was truly sustainable, present recruitment indicates that certain elements within each community are likely to persist. Of the three broad communities we aspired to in the 1980s the podocarp and successional ones appear to show the most promise. There is a question mark on the beech community's future. Meanwhile nature continues to tweak our planting efforts.

In some ways it would have been interesting to have attempted planting a slightly larger area based on the original vegetation on our property, but the reality is that we are gardeners at heart and such an approach would have been too restrictive and challenging when we were younger. We almost gave up establishing our wild garden in the early years, so I suspect we would not have persisted had the goal been even more focussed in its approach.

Our understanding of natural processes has increased with passing years. We have had the opportunity to make repeat visits to a range of remnant vegetation areas in Canterbury over the past twenty years. It has been a learning experience and a privilege. We now appreciate the complexity and diversity of these areas. They contain many interdependencies below and above the ground, some of which are not visible to the naked eye. Today we look at remnant areas through the same eyes, but we see different things.

Figure 3. The bush understorey in the podocarp part of the garden in winter 2022.

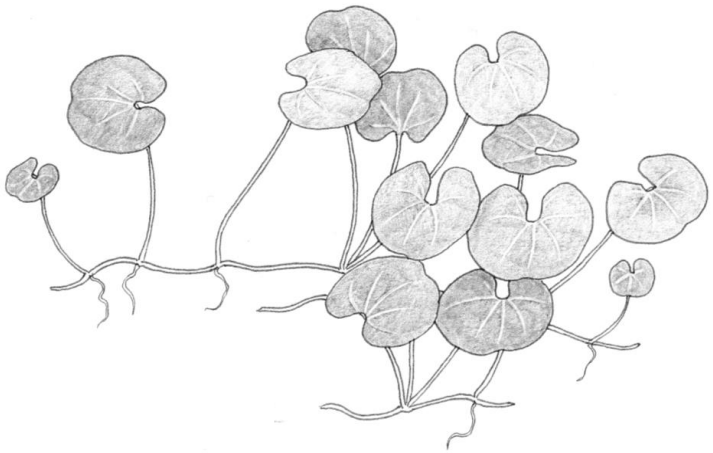
Figure 4. A close up of kahikatea seedling recruitment in winter 2022.

The introduction of weed and pest species to New Zealand and the reduction of habitats have completely changed the dynamics of regeneration processes in many areas. Regeneration sometimes benefits from some careful and strategic weed and pest control. I will always get a buzz out of establishing plants, but I'm now addicted to the quiet satisfaction obtained from controlling certain weeds in remnant areas. Unlike planting, there can be little evidence to see in the longer term if the weed control is successful, but those responsible will appreciate how different the outcome might have been had that weed control not been done. That's why weed-busting can be so gratifying.

I love our wild garden and enjoy the sense of expectation it delivers, but recognise the far greater value of remnant vegetation with all its complexity and unexpected discoveries. Our garden is, and will always remain, a contrivance. In forty-two years I have learnt that nature has a spade far mightier than any I could ever wield.

Table 1. Canopy species, height, and diameter at breast height (DHB) of the largest specimen, and their seedling recruitment characteristics.

Species	Common name	Height (m)	DBH (cm)	Recruitment
Cordyline australis	tī kōuka	15	41	Strong & early
Dacrycarpus dacrydioides	kahikatea	18	30	Strong & early
Dacrydium cupressinum	rimu	8	18	Nil
Elaeocarpus dentatus	hīnau	7	15	Weak & recent
Elaeocarpus hookerianus	pōkākā	10	28	Weak & early
Fuscospora solandri	tawhairauriki	21	35	Nil
Hoheria angustifolia	narrow-leaved houhere	16	48	Strong & early
Kunzea robusta / serotina agg.	kānuka	9	2 trunks @ 23	Strong & early
Plagianthus regius	manatu	19	40	Strong & early
Podocarpus totara	tōtara	16	39	Strong & early
Prumnopitys taxifolia	mātai	7	14	Weak & recent



Dichondra repens. Drawing by Hugh Wilson