IS KAHIKATEA (*DACRYCARPUS DACRYDIOIDES*) A WEED: THE RISE AND SUBSEQUENT DEMISE (?) OF NATIVE SEEDLINGS IN RESIDENTIAL GARDENS

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INTRODUCTION: A BRIEF WORD ON 'WEEDS'

Ralph Waldo Emerson (1803-82), American writer, philosopher and poet, suggested that a 'weed' is simply "[a] plant whose virtues have not yet been discovered" (Harlan & de Wet 1965, p.18). One hundred and twenty three years after his death the search for an all encompassing definition of the term continues. Although many accept Blatchley's (1912; cited in Harlan & de Wet 1965, p. 18) contention that a weed is either "a plant out of place or growing where it is not wanted" (Ross & Lembi 1999). A number of weed ecologists argue that these definitions fail to differentiate between plants that exhibit weedy characteristics (e.g. heavy seed production; rapid growth; adaptations for both short and long distance dispersal) and those regarded as "only occasional nuisances" (Ross & Lembi 1999, p.1). Such definitiveness may be required in weed ecology, but is not necessarily applicable when considering residential gardens. In this context I will be suggesting that Blatchley's definitions are sufficient when considered together with people's wider thoughts and ideas about their gardens.

If you live close to Riccarton Bush are you sure the last 'weed' you pulled was not in fact kahikatea (*Dacrycarpus dacrydioides*), the signature species of the Bush? An integral aspect of this study is attempting to understand such actions and how people think about plants, more specifically native woody species such as kahikatea, in their garden. I aim to: 1) investigate the ecological, social and cultural dimensions that influence the dispersal and regeneration native woody species from Riccarton Bush into surrounding residential gardens and 2) determine the potential role that residential gardens could play in helping to ensure the future of Riccarton Bush. To meet these aims an interdisciplinary approach has been adopted, consisting of an ecological and a social component; the latter being the main focus of this paper.

This paper will demonstrate that the decision as to whether or not a plant is a weed is not necessarily dependent on any inherent characteristics. To do this I will present preliminary findings from my interviews to discuss:

1. Christchurch residents' thoughts about their gardens and what constitutes a weed.
2. The implication of their thoughts for native woody seedlings in their gardens.

As we will see in regard to weeds, people do not differentiate simply on a plant's characteristics or whether it is native or exotic. In actuality their decision is determined by what they deem to be appropriate in different sections of their garden.

METHODS

Ecological methods

A total of 100 residential properties are being sampled at random within a 1.6 km radius of Riccarton Bush. At each site ecological and social information is being collected. The ecological component is focused on twelve native, bird-dispersed woody species (Table 1) and consists of a botanical survey and the collection of soil samples. Two of the species are deemed to be control species that one would expect to find throughout the landscape and therefore not to be influenced by distance from Riccarton Bush. The other ten are regarded as Riccarton Bush species as they are not typically found in gardens, sold only

Table 1: Botanical and common names of the twelve focus species in the study; * indicates control species

Species	Common name
Aristotelia serrata	Wineberry
Carpodetus serratus	Marbleleaf
*Coprosma robusta**	Karamu
Coprosma rotundifolia	
*Cordyline australis**	Cabbage tree
Dacrycarpus dacrydioides	Kahikatea
Elaeocarpus dentatus	Hinau
Elaeocarpus hookerianus	Pokaka
Lophomyrtus obcordata	N.Z. Myrtle
Melicytus ramiflorus	Mahoe
Pennantia corymbosa	Kaikomako
Streblus heterophyllus	Milk tree

in specialist nurseries, and therefore likely to exhibit a distance effect from the bush.

Social Methods

The social component consists of both qualitative interviews and a quantitative questionnaire survey. By enabling rich and diverse information to be gathered, interviews provide the opportunity to gain understanding and insight into the most important social and cultural facets of the study. Interviews are being conducted with the person most involved with the garden on the selected property. Numerous topics are explored, including respondents' thoughts about their: 1) neighbourhood; 2) property; 3) gardens; 4) garden management; 5) woody plants, focusing particularly on 'what is a weed?' and indigenous woody plants; 6) trees and 7) Riccarton Bush. Respondents are also shown live seedlings of the focus species and asked if they have seen any of them in their gardens. Themes identified in the interviews will be used to construct a meaningful questionnaire survey that will be administered at the remaining properties.

ARE CHRISTCHURCH GARDENS FULL OF NATIVE 'WEEDS'?

Native woody seedlings are an almost inescapable reality of Christchurch gardens. This study highlights the prevalence of *Coprosma robusta* and cabbage tree (*Cordyline australis*) (Table 2). So how do residents' thoughts and ideas about their gardens influence the survival of native woody seedlings located on their property? To address this question I will now elaborate upon four residential property owners'[1] thoughts about their garden and what a weed is:

1. David, a 'determined' gardener who "knows what he likes".
2. Michael, an "easy care gardener".
3. Ken, a gardener "who does things because he like[s] doing them".
4. Elizabeth, a self-confessed non-gardener who has recently re-located to Christchurch.

[1] The four respondents have been given pseudonyms. Ken lives 125m, Elizabeth 300m, Michael 600m and David 700m from Riccarton Bush.

Table 2: The total number of native woody species identified in the residential gardens surveyed to date. * Control species.

Species	No. of seedlings	No. of properties
*Coprosma robusta**	401	18
*Cordyline australis**	240	17
Dacrycarpus dacrydioides	19	6
Elaecarpus hookerianus	8	2
Melicytus ramiflorus	4	2
No seedlings		4
Total	**672**	**25**

NOW FOR THE FORMALITIES: FORM IN THE GARDEN

David and Michael considered some degree of formality in a garden to be important. This is evidenced in both their properties and also in Ken's by the prominence of traditionally more formal plants such as roses, rhododendrons and camellias. David's need for formality is highlighted by his reflection that the "style of garden I really like to have is a very English type garden with lots of structure to it". Initially Michael gave me the impression that such traditional ideas about form were not predominant in his thoughts about gardens, as he continually emphasised that he and his wife gardened quite separately, with the formal front garden being her sole domain whilst his was the low maintenance, largely native garden at the back of the property. It became apparent, however, that Michael's lack of involvement in the formal garden and interest in natives did not equate to his own preference as he later admitted "the gardens that I like are probably more formal".

In contrast to the other property owners, Elizabeth desires not formality, but rather a more 'natural' garden:

> I just like the natural look you know...I'm not a gardener anyway it's just I'd rather go outside and pull the odd weed out... we just like the sort of the unstructured look and it's like every season something will pop up, like there are bulbs all round the place...We [won't be] all of a sudden putting in paths and water fountains.

Elizabeth's one addition to her garden is a cabbage tree inherited after her husband backed into the pot it was in on his then construction site. In contrast, the other respondents have made numerous additions that will be expanded on in the following discussion.

SOMETHING TO ASPIRE TO: BEAUTY, COLOUR AND PRIVACY IN A GARDEN

The theme of formality is reiterated in David, Michael and Ken's descriptions of the additional plantings they have added to areas of their garden and their reasons for these. David and Michael have added more roses, camellias and rhododendrons to those already present and planted small hedges as borders. Integral to notions of garden form, symmetry is an important feature on both properties, as highlighted by Michael:

> [We] took out a camellia tree that was in the front of the house and transplanted it into another area...to give a continuous camellia-rhododendron frontage behind the front fence.

Ken has had to plant practically everything on his property as "there was very little planting" when he moved in with his family thirty-six years ago. "Traditional" plants have also been a feature, including "twenty or so rhododendrons", roses and his yearly replanting of flowers. Furthermore, his desire for symmetry is exemplified by his fondness for "grouping[s] of things [i.e. plants]."

Trees have been significant additions to residents' gardens. Michael's interests ensured he has "planted a whole series of natives" on the back section of his property including ponga (*Cyathea dealbata*), lemonwood (*Pittosporum eugenioides*) and *P. tenuifolium*. Ken has also added "a variety of trees" both native and exotic including miro (*Prumnopitys ferruginea*), red beech (*Nothofagus fusca*) and blue spruce (*Picea pungens*). David is an exception in that he has not planted any additional trees. This can be attributed to his love of and desire to have a property with mature trees and were significant considerations sixteen years ago when he purchased the current property that features several "eighty-year-old" trees.

The reasons underlying these additional plantings on the three properties can be ascribed to three different aspirations. The first two aspirations of creating "colour" and "beauty" on the property are fulfilled primarily by the formal areas of the garden, ensuring they receive a lot of thought, planning

and attention. Michael description of his wife's involvement in the front garden is illustrative:

> She does lots of weeding, rose pruning, fertilising, planting mostly [of] flowers,...quite a lot of watering,...dead heading just to keep the flowers looking really good [and] a lot of spraying mostly for insects.

For both Michael and David their formal areas do even more than simply providing colour and beauty. In Michael's eyes their front garden serves as a "showpiece" enhancing the house:

> It's not a boring house it is reasonably attractive with the frontage...[but] I think the front area adds to the house... [it] is pretty special... especially in the spring.

David, on the other hand, suggests the absence of the garden would be an injustice:

> this house deserves a nice garden, it wouldn't look right without [one]...imagine when it was created eighty years ago without the flora...and form around it... what it would've been like.

In contrast, Elizabeth assures that she "wouldn't be one to go out and plant flowers for the summer and green for the winter".

Whilst providing some colour and beauty, less formal trees also afford the third aspiration of privacy. Ken and David share an appreciation of their shade, variety and what David describes as a "visual extravaganza" during the seasons. In contrast, Michael suggests his native section is "definitely not a beautiful garden" but is "functional" through "screening out neighbours".

THE GOAL OF THE AVERAGE GARDENER

Of the four property owners, Elizabeth was the only one who was prepared to let her garden go 'wild'. Michael contended that he "could do it at the back...but couldn't at the front" before he conceded that his main reason is "it's too hard to keep it tidy". David and Ken were not receptive to the idea. Having a 'neat and tidy' garden was an aspiration of all four respondents

including Elizabeth, entailing that all are involved in management practices such as weeding. Ken "likes keeping the place in a reasonable state of tidiness", and according to David it is a necessity that he became aware of at young age. In Michael's view maintaining the garden is "a chore and a bore [that] has to be done" whenever necessary.

Finally, despite continued expressions of a preference for a more 'natural' garden, Elizabeth and her family have made significant changes to her property since her arrival:

> [We've] cut load[s] of stuff back and down and out the front we couldn't even see the road it was really, really badly overgrown and so he [her husband] just went nuts and trailer loads and trailer loads...went to the dump.

The reality is that her garden is 'natural' to the extent that she leaves the garden to "do what it wants to do [before] deciding if that's what [she] want[s] it to do". She is also aware of "keeping the property tidier than it was" by ensuring it is "less weedy, less overgrown...and arrang[ing] it a bit better".

WHAT IS A WEED IN THE EYES OF THE PROPERTY OWNER?

Blatchley's (*op. cit*) contention that a weed is either "a plant out of place or growing where it is not wanted" prevails in all of the property owners' notions about weeds. David proposes that a weed is:

> [S]omething that's not conducive to having a nice look in the garden.

Michael expresses a similar sentiment:

> A plant that's not desirable in the position that it is basically, so it could be anything... So something that is not wanted

As does Elizabeth in recounting a recent experience:

> Someone said something up our driveway [was] a weed and that it should be pulled out. I said oh no it's all good, it looks good. If it looks good [then] it isn't a weed.

THE RISE AND SUBSEQUENT DEMISE (?) OF NATIVE SEEDLINGS IN RESIDENTIAL GARDENS

Kahikatea and a number of other woody seedlings are weeds, at least in the eyes of the four property owners. After looking at the live seedlings both Elizabeth and Ken identified kahikatea as a species they have seen in their garden[2] and have pulled out. Ken also admits to regularly pulling out other native woody species including lacebark (*Hoheria* spp.), akeake (*Dodonaea viscosa*), *Pittosporum tenufolium* and lemonwood. Michael and David also confess that ribbonwood, *Pittosporum tenufolium*, lemonwood, cabbage tree and *Coprosma robusta* are 'weeds' that they too pull.

So why do all of the respondents pull out native woody seedlings? Simply suggesting that they do not value native species is insufficient. Their practicality and value is apparent to Michael:

> I like natives because they are easy, they look good, they add to the environment [and] they are good for birds.

In contrast, David asserts that natives are "ugly, spindly, unstructured, [of] little value [and] little beauty". However, as to how he would treat native seedlings in his garden he maintains, "I wouldn't pull them out necessarily but don't have a lot of affinity with them". There is a distinction for him between weeds and natives: "I suspect that everything that is out there that wasn't a weed would be a native". Ken is similar in that he "wouldn't call a native a weed but might pull some out". Further, Ken recounts how he has relocated a kowhai (*Sophora microphylla*) seedling and has contemplated shifting a totara (*Podocarpus totara*), an approach Michael is also willing to adopt:

> [If] it is something that I reasonably want and it's just in the wrong place I'll encourage it for a while and then transplant it somewhere else.

Michael's suggestion that a native seedling can be in the "wrong place" demonstrates that a conceptual differentiation is made between the various sections of a garden, ensuring that what is deemed to be 'appropriate' in one

[2] Kahikatea seedlings were found on Ken's property and in soil taken from Elizabeth's.

section may not be in another. The appropriateness of a native woody seedling as a result is largely determined by the aspirations the property owners have for the various sections of their garden. Aspirations, therefore, not only dictate any plantings the owners make to but also their management practices in particular sections of the garden. This notion of appropriateness rather than value appeared to be the underlying motive for respondents pulling out native seedlings.

The interrelated nature of respondents' aspirations and management practices is most evident in the more formal sections of the garden. These sections are not simply places where respondents' aspire to create "colour" and "beauty" but also areas of immense importance. Their importance is exhibited by the fact that the bulk of resources are channelled into these sections. For instance the vast majority of plants added to gardens by respondents were formal plants. Additionally, these areas also receive the greatest amount of attention motivated by the desire to best display and present the feature plant or plants of the section. Interestingly, like the other respondents Elizabeth, the self-confessed non-gardener, also focuses her attention and efforts on the formal sections of garden:

> [T]he only gardens [that] I weed [are] this one and the one out here. And there is nothing in it except roses and a couple of [bushes]. So anything other than those get[s] pulled out.

Her comment demonstrates that whether or not plant is considered a weed is *situational* and not dependent on any of its inherent characteristics; it is the location in which a native seedling becomes established that determines its fate. If it should be in a section of the garden that, within the owner's concept of his or her garden, sets a very narrow definition of appropriate species, the seedling *becomes a weed.* In and area of roses, for example, particular care is taken to remove any plants that detract from the roses. Therefore, it comes as no surprise that when kahikatea seedlings became established in Elizabeth's rose garden, she promptly removed them.

By the same token, Michael embraces the idea of kahikatea seedlings becoming established in his garden but *only in so far and as long as* this happens in his own native section. He has actively pursued this notion by planting juvenile kahikatea in this section. Here, kahikatea is 'appropriate', whereas in his wife's front garden he maintains that:

> [I]t's the formal garden, it's the flower garden you know, you can't have flowers and weeds. They just don't go together.

Consequently, a weed is indeed "a plant out of place or growing where it is not wanted". The judgement as to whether it is out of place or not wanted, however, is a *personal and completely situational* matter. In terms of my research this suggests that any discussion of the role residential gardens could play in the future of Riccarton Bush must begin with people's thoughts and ideas about their garden.

ACKNOWLEDGEMENTS

I'm indebted to Antje Bednarek for her suggestions, corrections and never ending support. Thanks also to Jon Sullivan for his discussions and patience, Harvey Perkins for his patience, and support from my family, Glenn Stewart, Jenny Hurst and Nicola Day.

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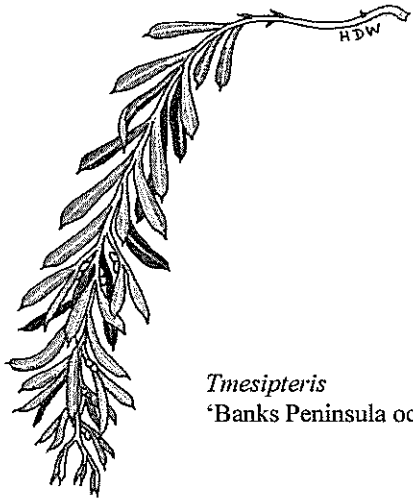

Tmesipteris
'Banks Peninsula octoploid'