



IMPRESSIONS OF NEW ZEALAND

*This article was written during my first trip outside of Australia in April 1979 and was published in the newsletter of the then recently formed New Zealand Permaculture Association. It records some of my earliest thoughts about new ecosystem evolution which has been such a focus of later research and writings (see Article 23 - **Weeds or Wild Nature** and other recent articles). Impressions of New Zealand was also included in **The Best of Permaculture**.*



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On this trip to New Zealand, my first, I have focussed my attention on the drier hill and high country of the South Island. My first real view of the country was in the Waihopai-Avon area of inland Marlborough.

Coming up the Wairau valley the lack of trees on the vast rugged landscape was obvious. The pine shelter belts with their tops bent by the prevailing winds told of the icy winds which must chill people, plants and animals. The rivers shocked me; wide shingle beds where there should be productive flats. Steep, thinly grassed slopes, barren tops and scree, wildly fluctuating rivers causing untold damage, all indicate landscapes in poor shape. The country as a whole is visibly young and unstable, eroding and decaying very quickly. These are natural consequences of a geologically active land and to most people seem inevitable.

VITALITY:

The other aspect of the country which took me a little longer to see was the vitality of the life forms, native and introduced. Life, primarily plant life, is the way the chaos of upheaval, volcanism and erosion is balanced. Order, stability and conservation are the characteristics of living systems; ie. ecosystems. Tremendous vigour in the plant systems is needed to colonise and conserve the wildly changing earth. The paradox that struck me is that the vitality of the life here comes directly from the chaotic forces of land movement which provide a diversity of microclimates, drainage and soils. The young soils in this country, in spite of their poorly developed ecology, have the capacity to support vigorous plant growth.

In parts of the Avon Valley I have seen the regeneration of native forests which is most encouraging. The pioneer "weed" Kanuka covering the shady slopes provides conditions for the Lancewood, Mahoe, Matipo, Olearia, Coprosma, Wineberry, Fuschia, Broadleaf and Beech to grow and thrive. In places the process was more advanced with Kanuka, many 100 years old, remnant in vigorous beech forest. Totara and Matai specimens indicated the ancient podocarp forest which once grew there.

The streams in these forests are stable, with bogs and flushes marking where minor tributaries enter, acting like massive sponges, storing water to be released over dry periods. Large number of wasps and bees working the honeydew and other forages indicate a potential yield. Skins and hides from feral animals are another product. The yields should be considered as bonuses because the real value of the steep land forests is to provide stable aquifers and river systems which are necessary for intensive long term management of the flat lands where most of the people live. Japan learnt centuries ago that to maximise the stability and long term productivity of the flats, steep lands need to be in forest. New Zealand must learn the same lesson.

INTRODUCED PLANTS:

Before coming here I was aware of how a huge range of introduced animals flourished but I had no idea of the vigour of introduced plants. In Tasmania, which has a similar climate to much of the South Island, many plants which are naturalised here have to be nurtured as garden plants. We do have some introduced “weed” shrubs and trees: Gorse, Sweet Briar, Tree Lucerne, Willow and most widespread of all, Blackberry. Here I have seen Pines, Spruce, Larch, Fir, Alder, Ash, Poplar, Oak, Hawthorn, Barberry, Rowan, Cherry, Plum, Gooseberry, and many others naturalised, and the landholders are struggling to exterminate them with the use of dangerous chemicals. The “weeds” will win.

For me it was interesting to see native Tasmanian Eucalypts and Wattles naturalising, but not the Blue Gum (*E.globulus*) which has been so widely planted in the Canterbury region. The Blue Gum is a coastal tree unaccustomed to hard frosts, a poor choice for large scale planting. The place where I saw Eucalypts and Wattles thriving was at Hawkeswood in North Canterbury. What appeared from Highway 1 to be a typical Tasmanian wet sclerophyll forest was in fact a whole new forest system in the making. It shows potential that no pine plantation could. I will go into some detail on its present state and possible evolution to show the Permaculture way of looking at the land.

THE HAWKESWOOD FOREST FROM A PERMACULTURE PERSPECTIVE:

The dominant trees are Eucalypts between 100 and 150 feet tall, the larger ones being *E.delegatensis* and *E.regnans*. Elm, Oak and Ash up to 100 feet look to be of a similar age. The tops of the tallest trees were windblown from the prevailing wind, suggesting they had been planted out on open ground. All the largest trees showed signs of fires and there were some burnt and dead trunks of deciduous trees. Two distinct generations of Eucalypt regrowth, obviously from the fires, had regenerated thickly but not under the large deciduous trees where light levels would have been too low. The older, fire-regenerated Eucalypts were up to 120 feet - very straight and only 2 feet diameter, indicating an age of less than 50 years. Silver Wattle (*Acacia dealbata*), a short-lived, fire regenerated nitrogen fixer, was abundant and formed a scrubby edge along the highway. Blackwood (*Acacia melanoxylon*) was regenerating in a gully from an old straggly 50 foot specimen. The younger ones look destined to be tall straight timber grade trees. Young seedlings of Oak, Elm and Ash were coming up through an understory of Sycamore, Blackberry, Plum, Hawthorn, Gorse, Mahoe, Coprosma, Black Matipo, and Cabbage Tree. Sycamore and most of the natives seemed to be taking over as the dominant understory from the thorny “weedy” shrubs.

As would be expected in a wet sclerophyll forest, the Wattles and Eucalypts, except Blackwood, were not regenerating and unless another fire comes through the eucalypts are destined to be succeeded by deciduous trees, and native trees and shrubs. Each plant paves the way for others which will succeed it leading to longer lived species and a more stable forest type.

SUCCESSION:

This process of succession could be directed by suitable under planting, to provide increased yields and continue the soil and aquifer development already occurring. According to a NZ Forest Service hunter familiar with the area, enormous numbers of pigs have been culled from Hawkeswood, indicating the great forage potential. The potential value of selectively logged trees was obvious.

Tentatively, I would like to suggest under planting with Black Walnuts, European Beech, Horse Chestnut, Hickories, and some of the American Oaks. These are all long lived, relatively slow growing trees of special timber value which also provide useful forage (nuts and seeds) for pigs and deer. These animals could be farmed allowing for resting and rotations to enhance the natural regeneration.

Honey, particularly from the Eucalypts and Wattles, would be a continuing yield for some time, but special timbers and animal products would be the main yields in the long term.

I hope this small account of Hawkeswood gives one example of how permaculture principles might be applied in the NZ landscape. Permaculture is not just forest farming. It is the way of working with nature to provide livelihoods for ourselves and our descendants.

