



# THE ROLE OF NATIVE VEGETATION IN BACK YARD PERMACULTURE

*This article published in **Green Connections**, June 1996, is the third version of an article originally published in the newsletter of **Permaculture North** in 1995. It provides some guidelines for how native vegetation can be used as an integral if small element in garden agriculture without succumbing to the fashion to plant indigenous species everywhere.*



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Over the last decade the commitment to preserving areas of remnant native vegetation and planting locally indigenous species has grown from a few conservationists to a very strong movement backed by government funding. In fact, the native revegetation movement has been more effective in getting the public to implement its agenda than the permaculture movement has in achieving community and local self reliance, particularly in food production. Very often people interested in permaculture are also committed to revegetation and the relationship between the two is a very interesting one. This is a very broad subject which I cannot deal with here but I thought some practical guidelines on how we might address the issue at the backyard level may help.

The competition for space between uses in urban gardens can be quite intense. Using permaculture principles we should:

- place the highest priority on producing as much of the household's perishable food needs as practicable.
- design to minimise use of fossil fuels and non-renewable resources. (eg use of clothes lines for drying)
- allow for outdoor living space which provides for some of the personal needs of the household (eg reduce travelling for recreation)
- have facilities for property maintenance and repair.
- maintain a low fire hazard environment.

In any home garden, sunlight eventually becomes the limiting factor to productivity and energy efficiency. Designing to maximise use of sunlight is the most important principle in sustainable garden design.

Native plants can be useful in the following ways:

- Providing quick growing, minimum care shelter, screening and shade.
- Attracting useful native birds and predatory insects.
- Some food and other products.
- Providing mulch from leaf fall and prunings.

However, if we give a priority to native plants we will dramatically reduce our space, sunlight, water and nutrients to produce really useful food and if we include too many large evergreen trees we can dramatically reduce our (or our neighbour's) ability to use the sun to heat our houses, grow food or dry clothes and thus save fossil fuels.

Even on our 2.25 acres (1 hectare) at Hepburn Permaculture Gardens<sup>1</sup> we have made minimal use of large space, light and water consuming eucalypts. More moderate sized Acacias and Casuarinas have been used for their shelter and soil improving qualities.

Even the emphasis on native plants for pest control is a bit overstated at times. Carrots (or any other umbelliferous species) going to seed for your next crop are as good at attracting

1 Holmgren, D. *Hepburn Permaculture Gardens: 10 years of sustainable living* Holmgren Design Services 1995

hover flies, parasitic wasps and other beneficial native insects as *Bursaria spinosa* or other renowned native species. On the other hand *Bursaria* maybe the choice if you need a tough long lived shade tolerant shrub to in fill between fast growing bushy wattles on the dry shale and clay bank of an excavated house site.

Where the local vegetation is dry sclerophyll forest (most of densely settled Victoria) or heath land, then the problems of use of local natives in home gardens can be substantial. Permaculture gardens, by their very nature, are high density vegetation systems, generally dependent on some irrigation, growing on a nutrient rich, organic soil. Sclerophyll plants, used to open conditions, low nutrients and often fire, may grow well at first but as the garden matures they may become weak and leggy, and not recover well from pruning. Some low nutrient mulch from leaves and a little firewood maybe the final yields. If we site these species at sunny edges where they might do better we lose our most productive sites for vegetable production and fruiting plants requiring full sun. Bushfire hazard can also be increased as most sclerophyll species are fire prone through a combination of combustible oils in the foliage, dry litter accumulation and (in some cases) shedding or fibrous bark.

On the east coast of Australia, the local rainforest vegetation is more suitable for inclusion in gardens because it includes species better suited to high nutrient, partially shaded conditions and are sometimes food (or poultry forage) bearing plants. Lilly pillys are good examples of tough food and forage bearing rainforest trees suitable for hedging to control form and provide mulch. Cherry Ballart (*Exocarpos cupressiformis*) is one of the few dry forest species native to southern Australia which has similar characteristics and uses and is a remnant of rainforest-like vegetation which was more common before the effects of thousands of years of Aboriginal burning. Unfortunately the propagation and cultivation of this beautiful small tree is still problematic although current experiments may overcome this<sup>2</sup>.

Some dry forest species are well suited to productive gardens. For example Cootamundra wattle is a low fire hazard, relatively long lived *Acacia* which is an ideal dense shelter shrub or small tree for very poor and dry soils. It sheds loads of soil improving fine mulch and a huge crop of seed for poultry feed or human food. Few wattles are as useful.

However we should not go overboard about the bush foods fad. For decades I have been eating bush food and where appropriate growing some species in gardens, but as a “good peasant” I know what plants make most productive use of space, what is easy to prepare and serve and what fills the belly, and it’s rarely a native species. Bush foods have a limited role in the limited space of the home garden. Selection of cultivars (as with *Macadamia*) by committed native food horticulturalist with more space to experiment, may over time change this situation somewhat.

2 Marilyn Sprague (personal communication)

We need to consider each species on its merits and not place too much importance on these artificial categories which disguise the real issue. **Our gardens and towns are human ecologies which make use of a diverse range of botanical species directly and indirectly. If we are to make them sustainable then we need to design human ecologies from the widest range of genetic materials available.** This is exactly what Nature does in dealing with all new situations. Nature is an equal opportunity employer and doesn't discriminate on the basis of race, genera or species.

This doesn't mean we ignore rampancy as a (negative) factor in selection of species. It is clearly unwise to plant rampant herbs such as yarrow in the richly composted soil of our vegetable garden for some herbal medicine value when it will grow quite well underfoot competing with grasses in the lawn.

This situation is more complex when we consider species which have the potential to invade areas of native vegetation. For example Cootamundra wattle is regarded by many as a serious "environmental weed" in Victoria and South Australia. This is not an issue I can address in this article<sup>3</sup> but a more holistic approach to the issue of the continuing evolution of our ecologies and landscapes is desperately needed. Efforts to prevent spread of plants well suited to prevailing conditions are doomed to fail in the long term and whether we like it or not, exotic and native species from other parts of Australia will spread to limits determined by ecological factors, rather than community campaigns or government funding to "eradicate" environmental weeds. This is especially true for plants spread by birds.

On the issue of ecological diversity, the suburbs already provide incredibly diverse plant systems (admittedly very different from the pre-settlement ones) which have the potential to support a diverse range of native wildlife. Factors other than lack of locally indigenous vegetation currently limit the range and numbers of native animals and birds in our suburbs, such as huge populations of predators especially cats, road traffic and roads dissecting areas, and use of pesticides and other toxins. This is especially true now that native and locally indigenous vegetation is predominantly used in public open space plantings.

If we are serious about reducing the environmental impact of our cities and suburbs then we need to focus a lot more on our use of transport, home energy use and where our food comes from, and a lot less on whether our backyard supports three or four species of honey eater.

3 I have found very few good references putting the case for exotic and naturalised vegetation. The following paper provides a good starting point.

Nanninga, P. et al Exotics Verses Natives - Why Not Both? in *Proceedings 1994 Greening Australia Conference*

In my own book, *Trees On the Treeless Plains Revegetation Manual for the Volcanic Landscapes of Central Victoria* (Holmgren Design Services 1994.) I demonstrate a balanced use of natives and exotics in farm tree planting.

In a book in preparation (*Migrant Plants and Animals: Ecological Imperialism or Ecological Evolution*) I am attempting to put together more comprehensive arguments for a positive approach to naturalised plants and animals to counter what I see as an excessively negative view taken by most conservationists and many biological scientists.

In the end, a garden full of local native plants may appear to be environmentally sound but if we include the power station, the market garden, commercial orchard and the rubbish tip, and other facilities necessary to sustain us then the picture doesn't look so rosy. I believe the real reason that more people prefer to grow native plants is that it involves less work and skill than growing your own food and that food remains so cheap (while farmers go broke and the land degrades) that most householders can't be bothered. For those of us committed to household environmental responsibility, an apple is a better symbol than a gum nut.