

Sustainable Gardening

For more information visit www.sustainableliving.org.nz

A typical garden

What does a typical Kiwi garden look like? There may be: play space, sitting space, clothes-drying, storage, firewood, dog or chicken run, interesting textures, scents and sounds, flowers, food crops, compost, trees for shade and wind shelter and a place to connect with nature.

A more sustainable garden - how does your garden rate?

What would a more *sustainable* garden look like compared with the typical garden?

MAINTAINING SOIL FERTILITY

Maintain and improve soil fertility with mulch, green manures and composts. Use mostly 'no dig' methods, to minimise soil disturbance or compaction (and save your back!).

COMPOSTING & RECYCLING

Try to keep all material on site - prunings and peelings can be composted and will improve your soils, woody material can be shredded as mulch. Larger prunings can provide free firewood.

BIODIVERSITY & SEED/PLANT SELECTION

Aim for a diversity of food plants, plantings and crops at different times. (Use 'companion planting' to aid plant growth or deter insect pests.) Try using 'heritage' species for climate hardiness and disease resistance. Save your own seed. Favour NZ

natives with their associated insect life. If you have a cat, keep it in at night and have a bell on its collar, to reduce wildlife kills. Enjoy seeing more birds, insects, lizards etc in your garden.

SHADE & SHELTER

Well placed trees, hedges and trellis help with shade in summer, and crop shelter. This can give you bigger crops and extended growing seasons.

LAWNS & PAVED AREAS

A small lawn area means less watering, especially if the grass is a mix of slower growing, drought tolerant species. You could cut the lawn less often and use a push mower. Use the extra garden area for veges or for children's play. A household with fewer vehicles needs less paved areas for parking but always wash vehicles on the grass so dirt and chemical residues don't end up in storm-water drains and streams.

EDIBLE GARDENING

Try to produce a wide range of food for the household, over an extended season and bottle/dry/preserve surplus produce for use later. What you can't grow, buy from local organic growers. You will have good

quality food grown without the use of chemicals and you will reduce the need for transport.

WATER USE & LOW WATER GARDENING

Group plants that need extra water, and use drought-tolerant plants where possible. Collect rain water (and perhaps grey water) to use on the garden.

PEST & DISEASE CONTROL

Let natural predators such as frogs, lizards, birds and insects control the pest populations instead of toxic chemicals. Certain wild and garden flowers grown alongside food crops will encourage pollinators and useful insects. Tolerate a certain level of weeds. You will have reduced chemical residues on your food and you'll save money.

WEED MANAGEMENT

Avoid growing known invasive or 'pest' exotic plants. This will help keep native bush, streams and coastal areas close to towns intact, for people to enjoy, and as wildlife refuges.

Natural vs human-made

Aim to favour natural production of food and other plants, with minimal use of chemicals. There will be **health, cost-saving** and **environmental** benefits. Remember this when you see 'advice' on TV, in newspapers and in garden centres. There are significant commercial pressures to get you to buy synthetic garden fertilisers and pesticides, as well as the hybrid seeds and plant varieties selected to rely on such chemical inputs for crop production.

	Inputs	Outputs
Natural	<ul style="list-style-type: none"> ▶ Sunshine (energy) ▶ Air, including CO₂ ▶ Rain & ground water ▶ Living soil ▶ Plants and their seeds ▶ Organic wastes 	<ul style="list-style-type: none"> ▶ Veges, fruit, flowers, seeds, & roots ▶ Cleaner air, oxygen ▶ Cleaner surface water ▶ Compostable organic wastes
Human-made	<ul style="list-style-type: none"> ▶ Tap water (chemicals) ▶ Chemical fertilisers ▶ Pesticides, herbicides ▶ Electricity, petrol ▶ Machinery & tools ▶ Plastics, oils, metals ▶ Modified plant genetic material (GE) 	<ul style="list-style-type: none"> ▶ Polluted groundwater and streams (inc. nitrates, pesticide residues, oils) ▶ Bonfire smoke ▶ Mower fumes, noise ▶ Removal of organic wastes to landfill

Actions in the Garden

Low water gardening: reducing water demand

1. Know about the water demands of different plants so they can be grouped together. You can then reduce the frequency of watering in some areas of the garden. Visit www.bush.org.nz (go to the 'toolbox' to find the planter guide) to look at Landcare Research's Plant-finder database, which identifies NZ native plants to suit different regions and soils, and has notes on each plant including likely drought tolerance.
2. Reduce the area of thirsty lawn and save precious water for other uses, such as fruit and veges! If you use a sprinkler, limit the lawn area to suit neat multiples of the typical water-coverage pattern of your sprinkler equipment and avoid wasting water on paths and fences. Select a grass type that needs less water.
3. Water the plant roots, not the leaves (or paths).
4. If you install an irrigation system, control it with a timer.
5. Avoid watering in the heat of the day or in windy weather – the water will evaporate. Water in the early morning or in the evening. Windbreaks can also reduce water loss.
6. Improve the soil's capacity to take up and retain water. Both free draining sandy soils and waterlogged clay soils can be improved by adding organic matter which will help soil particles to form a 'crumb' structure.
7. Keep water in the soil for longer using surface mulch.
8. Check the soil moisture before you water. Only water if it is really dry.
9. Use glazed flower-pots or recycled plastic pots rather than the plain terracotta as the terracotta loses water from the pot sides as well as the soil surface.
10. If drought and hot winds are common, consider the fire resistance of plants up to 30m upwind of the house. Information on flammability of NZ natives in wildfires is available from your local fire authority.

Shade and shelter: using garden plants to improve the living environment

1. Plan a garden for outdoor shade as well as sunny areas. Shade may help prevent skin cancers.
2. Use plantings strategically to shade your home, particularly NW or W facing room which overheat in summer. Shade options include deciduous trees

and shrubs, a pergola or a window box plus a wooden lattice to form a 'living blind' of summer flowers.

3. Plant a winter windbreak to deflect cold winds.
4. If hay fever or other plant allergies are a problem consider making a low-allergen garden close to the house. Replace the lawn with a patio, avoid dusty or mouldy mulches, no fountains, and choose insect-pollinated rather than wind-pollinated plants as they have heavier pollen that is less likely to be airborne. *Allergy New Zealand* can advise: www.allergy.org.nz

Bio-diversity: giving the garden a natural strength

1. Aim for a wide variety of plants, even in small urban gardens. (Plant pests do most damage when many plants of the same species are grouped together).
2. Attract New Zealand native insect-eating birds, including fantail, grey warbler, silvereye, and shining cuckoo. You may wish to supplement their food and water during the winter and then reduce it in spring once insects are more plentiful. You may have to net fruit trees and bushes to protect crops.
3. Keep cats well fed and indoors at night as they tend to be lizard eaters and a bird deterrent.
4. Attract other wildlife to your garden, such as lizards, hedgehogs and butterflies.
5. Try to obtain New Zealand native shrubs and trees that would naturally occur in your climatic region and soil type as they are most likely to thrive and encourage the associated local wildlife. The DoC practical guide *Protecting and Restoring our Natural Heritage* can be seen in full on the web at www.doc.govt.nz.

Weeds spread: keeping invasive garden plants out of bush areas.

1. Avoid growing invasive or pest plant species in your garden.
2. Become informed about invasive plant pest species in your region, and lobby garden centres to stop selling them to gardeners. A national *Weedbusters* campaign is being run by Department of Conservation. See www.weedbusters.org.nz or phone DoC at 04 471 3286



For more detailed information refer to the website www.sustainableliving.org.nz