

Best practice guidelines for a water efficient garden

These guidelines will help you create and maintain water efficient landscapes in the Canberra region. They provide a step by step checklist to help you incorporate the findings of the WaterRight Gardens Webtool into your garden.

In the Canberra region, water efficient gardens often have a number of key things in common:

- Uncompacted, soil to a depth of 250 mm, with plenty of organic material.
- Good protection from prevailing summer wind and sun.
- The right plants in the right locations, in particular hardy plants in exposed, sunny locations.
- Mulch and areas of groundcover plants.
- Efficient methods of watering, which take rainfall and the season into account in the watering schedule.
- Sources, other than tap water, for irrigation.

SOIL

Soil is a crucial element in most water efficient gardens. It provides the necessary water and nutrients to keep plants healthy. Tips to create a good, deep soil:

- Ensure you have enough topsoil, at least 250 mm, with a good structure. Raised and mounded garden beds can help create these conditions.
- You can improve poorly structured and compacted soil by adding decomposed organic matter, by working the soil or by aerating your soil with a fork.

- Gypsum or clay-breaker can be worked through compacted clay soils, to improve drainage, water penetration and nutrient availability.
- Avoid adding uncomposted woody material to your soil.
- Apply organic matter regularly, as it breaks down. It may take several years to improve a poorly structured soil.
- Don't dig clay soil when it is too wet – you'll only add to the compaction.
- Be sure to incorporate the original soil into plantings, and dig deep, wide holes when planting trees and shrubs to avoid waterlogging.

MICROCLIMATE

Different microclimates provide different growing conditions for plants. Matching plants to the conditions they require is a major step towards creating a healthy and waterwise garden.

Sun and shade

The position of the sun in different seasons and the patterns of sun and shade at different times of the day will have a major impact on plant choice and water use.

- Generally the northern and western sides of your house will be sunnier, warmer and more exposed to the elements, particularly summer winds, making this the best place for tough low water use plants. North facing slopes often receive more direct sunlight and summer wind than south facing slopes.



- Create shade through the design of your garden. Use trees, shrubs, windbreaks, climbing plants, pergolas or screens to make the garden cooler and need less water.
- Large trees provide their own shady microclimate. Deciduous trees can be useful on the north side of the house to provide summer shade, but let in winter light in.
- High levels of shade often occur on the southern or south-eastern sides of a house. If you have high water-use plants, this is the area for to plant them. Use shade tolerant plants in these areas.
- Monitor the growth of trees. Prune trees to let more light into your house or onto your sun loving plants.

Wind

- Create windbreaks on the northern and western sides of your garden to provide protection from hot, dry winds. Windbreaks can include lattice, screens, shade cloth or pergolas.
- Use living windbreaks such as hedges or screening plants to protect your garden, and create shade and privacy.
- Windbreaks should act as a filter rather than a barrier. A solid barrier will create turbulence behind the windbreak.
- If you can't create windbreaks, ask your local nursery about plants that tolerate windy conditions.

Slopes

- The topography and slope of your block will affect drainage patterns, and may cause wet and dry areas. This affects planting schemes and irrigation regimes in different areas.
- You can turn slopes to your advantage by placing high water-use plants in garden beds at the bottom of slopes.
- By contouring a garden, you can redirect runoff from paths or driveways to where it is needed – in your lawn areas or garden beds.
- Terracing can help prevent water wastage on sloping blocks.
- Try to avoid planting lawn on slopes as this can lead to water loss from runoff.

Buildings and hard surfaces

- Buildings, walls, fences and other structures can radiate heat, creating garden hot spots that may require additional watering. Alternatively, they may block the sun, creating areas of shadow that suit shade tolerant plants and less watering.
- House eaves may limit the amount of rainfall that a garden receives. This can create a dry microclimate, particularly on the northern (hot) side of the house. Use very low water-use plants, such as cacti, in these areas.
- Large areas of hard surfaces can create hot spots that require additional water. Front gardens are often affected by the road or a driveway. Choose light coloured paving (and walls) that absorb less heat to minimise this effect.
- By making paved areas more permeable, rain can seep into soil for nearby plant roots.
- Try to make paths from organic material such as woodchips or bark mulch rather than hard materials.

PLANTS

By placing plants in good, deep soil and in the best microclimate to meet their growing needs, you can create a waterwise garden.

- Wherever possible, use water efficient plants— indicated by 'one drop' in the Canberra Plant Selector tool. When buying plants, ask nursery staff which ones use less water.
- Always group plants with similar water requirements together in separate watering zones or green areas.
- Plant trees and shrubs where they create natural shade and windbreaks to reduce evaporation of higher water use plants.
- Plant moisture loving plants in low lying areas, or at the base of garden slopes.
- High water use plants including most vegetables, fruit trees and flowering annuals, require a sunny position. Try to use wind breaks around them to use water more efficiently.
- Remember to keep weeds under control as they compete with garden plants for water and nutrients.

MULCH

Many organic and inorganic materials can be used as mulch. Organic mulches are the most popular because they improve soil structure and add nutrients to the soil as they decompose.

- Top up organic mulches regularly, as they break down relatively quickly.
- The best organic mulches are made of coarse material that enables rain or irrigation water to penetrate through to the soil.
- It is best to spread mulch thickly—50 to 75 mm deep for most organic mulches. However it is critical not to lay mulch too deeply.
- Apply mulch to wet soil that has been freshly weeded.
- Check the mulch regularly for compaction, and loosen it to ensure water can get through.
- Never let organic mulch sit against plant trunks and stems.

GROUNDCOVER

Covering as much of the soil as possible is critical in a successful Canberra garden and groundcover plants (living mulch) are an ideal alternative or addition to your garden mulch. They protect the soil and other plant roots from the sun and assist in keeping moisture in the soil.

- Groundcovers can include creeping plants, densely planted perennials, ferns and other plant species.
- They reduce the rate of water evaporating from the soil.

FROST

Frost is a regular event in the colder months, which can have serious impacts on Canberra gardens. Frost will burn the foliage of sensitive plants, damage new shoots and kill seedlings or otherwise stressed plants. Some tips that will help your garden survive frosts include:

- choose plants for your garden that are frost tolerant;
- avoid planting sensitive species in low lying areas or frost hollows;
- avoid planting new seedlings during the colder months;
- plant sensitive species adjacent to walls, under eaves or beneath the canopy of trees;

- monitor weather reports and use old sheets, shade cloth or upturned flower pots to cover sensitive plants if frost is predicted; and
- regular spraying of the foliage of your plants with a seaweed based soluble fertiliser can provide increased resistance to frost.

HOW TO WATER EFFICIENTLY

An efficient irrigation method and schedule is the key to saving water and ensuring your garden's health. Understanding how to water, using techniques such as drip irrigation and water pulsing will ensure water is used efficiently in your garden.

- Only apply the minimum amount of water needed to keep your plants healthy.
- Try to ensure the water infiltrates the root zone without any runoff and distribute the water evenly.
- If required, pulse watering events so as to avoid runoff. This technique means that you apply water on small parts of each Green Area, watering only until it cannot be absorbed by the soil. This is evident when water either pools on the surface, or runs away. Once this happens, stop watering that spot and move on, returning when the water has all been absorbed. You can then continue watering until the garden's needs are satisfied, according to your irrigation schedule.
- Sandy loam and loamy sand soils, such as improved clays or purchased garden mixes, hold a lot of water, needing less frequent watering.
- Aim to apply the same amount of water each time, but change the period between watering to suit the season and weather. This is known as irrigation scheduling or irrigation frequency. The WaterRight Gardens Webtool will provide an irrigation schedule for your garden and lawn areas.
- Remember to incorporate natural rainfall into your irrigation schedule. Buy a rain gauge and place it in your garden. Defer watering if you get more rain than your soil can hold. The WaterRight Garden Webtool will help you with this.
- When establishing plants, make sure you give thorough soakings that encourage deeper roots, rather than light surface waterings.
- Whichever way you water your garden and lawns, ensure you follow the guidelines in the *Irrigation methods* Fact Sheet.

- Always check to ensure you are watering at times permitted by current water restrictions. Visit www.actew.com.au or call 6248 3131 for the latest information.
- Where possible, try to use alternative water sources for your garden watering, such as rainwater, greywater or bore water. To work out the best water supply for your garden, check the *Sources of water for your garden* Fact Sheet.

LAWNS

Lawn plays a key aesthetic and recreational role in gardens and can have a place in waterwise garden design.

- The better the soil beneath your lawn, the deeper the roots and the less water needed.
- Refrain from over-watering your lawn and let it brown off during extended dry periods, you will discover it has an excellent capacity to recover after rain.
- If you feel you must water your lawn, water infrequently but deeply. Monitor if water is penetrating the soil during watering, and use pulsed watering to ensure efficient water use. See the *Irrigation methods* Fact Sheet.
- Water your lawn if it is showing signs of stress, such as losing colour (in summer) or if the grass wilts or leaf blades roll or fold in half lengthways. Another way to tell if your lawn needs watering is to step on it. If footprints remain visible, it needs watering.
- Don't cut lawn too short. The ideal height for lawn is around 50 mm. If your lawn becomes particularly long it is important to bring it back to 50 mm gradually. More severe cutting can stress the grass. Cut one-third of the grass blade each time you mow. Longer lawn is more resilient to foot traffic, looks lusher and helps retain moisture in the soil.
- Leave clippings to sit on the lawn as mulch.
- Aerate your lawn regularly to ensure that rain or irrigation penetrates efficiently and evenly. Treat with a soil wetting agent if required.

CONTAINER PLANTS

Potted plants, even drought tolerant ones, require regular watering as they have less soil to draw water from. The following tips will help you create water efficient container plants.

- Larger pots are generally more water efficient than small pots.
- Group pots together to help keep them cooler. Group them according to their watering needs, especially if you are watering them with an irrigation system.
- Use a premium quality potting mix and add hydrated water crystals around the roots of new plantings.
- Mulch the surface of the potting mix.
- If the potting mix becomes water repellent, treat with a soil wetter, or soak the pot in a larger container of water and soil wetting agent until it stops bubbling.
- Allow the top 2 cm of potting mix to dry out between waterings to avoid overwatering your plants.
- Unglazed terracotta pots are very porous, absorbing water readily. Line them with plastic, ensuring you cut out drainage holes, or treat the inside of the pot with a sealant.
- Protect hanging baskets from drying winds.

CONSTANT CHANGE

Remember, your garden's microclimate may change with time and as plants grow or are removed.

To learn more, refer to the WaterRight Gardens Fact Sheets, and as your garden changes, revisit the WaterRight Gardens Webtool regularly, to ensure you are using the correct watering schedule.

MORE INFORMATION

For more information on water efficiency tools rebates and *Think water, act water* initiatives:

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Email: WaterResources@act.gov.au

Website: www.thinkwater.act.gov.au