

FACT SHEET



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BE WATERWISE OUTDOORS & IN THE GARDEN

Can you imagine 900 one-litre milk cartons each filled with water being delivered to your doorstep every morning?. Astonishingly, that's how much water is used every day by the average Australian household.

Just outside, the average household uses 170,000 litres of water every year. That's enough to fill four backyard swimming pools. All this water is sprinkled, squirted, dropped, gushed and quite often wasted.

HOW MUCH WATER DO WE USE OUTDOORS? (Average values)

An average tap flows at up to 20 litres per minute depending on how far it's turned on. Apply this to all your outdoor watering activities (see below) and you'll be surprised at how much is actually used.

Filling swimming pool	40,000 litres
Sprinkler	1,000 litres/hour
Garden dripper	4 litres/hour
Washing car with a running hose	200 litres
Continuously dripping tap	900 litres/day
Hand-held hose	20 litres/min.
Hosing driveway	100 litres

SAVEWATER!, SAVE MONEY, SAVE THE ENVIRONMENT

By using water sensibly and efficiently, we can all contribute to reducing community demand for this precious resource. Saving water will eliminate or defer the need for new dams and supply systems, and reduce operating costs. This will contain household water bills and reduce impact on our environment.



BE WATERWISE OUTDOORS

How can we stop wasting water without affecting our lifestyle?. It's easy, just follow the simple tips in this fact sheet.

LEAKS

Regularly check taps, washers, pipes and cisterns for leaks.

- Turn all taps off before you go to bed one night and take a reading of the water meter. Check the meter next morning before any water is used. If the meter has advanced, and you are sure no-one used any water during the night, there is a leaking pipe, tap or toilet cistern. Locate the problem and repair it.
- A continuously dripping tap can waste up to 900 litres per day. Turn off all hoses with spray and watergun nozzles at the tap.

THE LAWN

A lawn can use more water per square metre than any other area in your garden.

- Most lawns need no more than 25mm a week in summer. Only half this amount is needed in coastal areas. Check the output of your sprinkler by placing a few tins in the area covered by the sprinkler and timing how long it takes to collect 25mm. If you water twice a

week, halve this time to get the volume needed for each watering. It is better to water thoroughly but only once or twice a week, as this encourages deep root growth and strong plants.

- Use efficient sprinklers that produce a fairly even water distribution. Avoid those that produce a fine mist spray which blows away in the wind.
- Water in the evening so that the water gets down to the root level for the heat of the next day.
- Avoid watering when it's windy. Not only does the wind blow the water away from the plants, it also increases evaporation.
- Water your lawn only when it needs it. A good way to see if your lawn needs watering is to step on the grass. If it springs back up when you move, it doesn't need water. If it stays flat, it may need watering.
- Reduce lawn area. This has the additional benefit of reducing your mowing. Check at your local nursery for a suitable drought-tolerant lawn grass for your area.
- Let the lawn go brown during very dry times. When the rain comes, the transformation to green will be dramatic.
- Give the lawn a feed - but do not over-fertilise.
- Aerate the soil to allow water to be absorbed more easily.



- Do not mow to a height less than 2cm. Taller grass holds water better.

- Use a timer with your sprinkler. A forgotten sprinkler wastes more than

1000 litres per hour; leave it overnight and it could cost you \$10 each time. A timer will help you avoid wastage.

THE GARDEN

- Design water-efficient gardens and outdoor areas, including directing drainage from paved areas for watering garden beds.
- Plant drought-resistant native trees and plants. Many natives are both attractive and thrive with far less watering than do other species.
- Don't over-water, as this takes nutrients as well as water past the root zone. This deprives your plants of nourishment and wastes water.
- Use a good mulch. Mulches can prevent up to 75% of evaporation loss and therefore are a cheap, easy and effective technique to make the most of water in the garden. Additionally,

mulches prevent excessive runoff, restrict weed growth, keep the soil cool in summer and warm in winter, improve soil structure and help put valuable nutrients back into the soil. The best mulch is a well-rotted compost. When mulching around trees, place the mulch away from the trunk to prevent collar rot occurring.

- Group plants according to how much water they need. By grouping plants into high or low water users, a watering pattern can be designed to prevent waste on plants that don't need a lot of water.
- Toughen up your plants. Too many plants are pampered to the point where they are so dependent on water they do not go out of their way to find any water themselves. Wait until the soil dries out before watering and use a plant such as bamboo as an indicator - when the leaves start to droop, then water.
- Water the highest parts of the garden first. This ensures that any runoff water soaks into lower, dry areas rather than being wasted.
- Remove weeds. Weeds compete for water and nutrients. A good mulch will help prevent weeds growing.
- Install a drip system. Drip watering, sometimes called drip irrigation or micro-irrigation, uses a permanently laid plastic pipe with dripper outlets to deliver the right amount of water to each plant at a rate the soil can readily absorb. Drip systems are both economical and easy to install, and are effective on trees, shrubs and some garden beds. They are not suitable for lawns, which require an even spread of water.
- Use micro-sprays on garden beds and small areas of lawn, if you have a lot of annuals and ferns where a drip system is not appropriate.
- Dig a small trench around trees. This will give the water a chance to soak in and reduces water lost at runoff.
- Water your pot plants by dunking them in a bucket of water. Wait a few seconds. When the bubbles disappear, do the next pot. This saves water and ensures pot plants get a thorough drink.
- Water the roots not the leaves. Contrary to popular belief, watering the leaves of trees and shrubs is not beneficial. It increases water loss through evaporation, and chlorine in the water can damage the leaves. Water drops on leaves can act as lenses, concentrating the sunlight and can burn the leaves.
- Don't water the road or pathways. Position your sprinklers so water lands on the lawn or garden, not on paved areas.

- Water carefully to avoid runoff. Soil and dissolved nutrients are carried away with runoff, which increases the need for expensive fertiliser and pollutes nearby streams. If you soil is clay, use clay-breaking agents and compost to improve the soil's water absorption characteristics.
- Use a trigger hose. This allows you to be in control and water is not wasted when moving the hose around, but remember to turn the tap off when finished in case the pressure build-up causes the nozzle to pop off.

THE YARD

- Keep a close eye on any playing with the hose. Squirting water around pointlessly can waste over 1000 litres per hour.
- Cleaning a path with a broom is quicker and more efficient than using a hose, which wastes 200 litres of water every 10 minutes. Sweeping paths also improves the quality of our urban runoff and is better for our environment.
- Every house should have a compost bin. Compost improves the structure of your soil. This increases the moisture holding capacity of sandy soils and allows better penetration of water into heavy clay soils.



SWIMMING POOL

- Cover your pool to reduce evaporation, retain warmth and keep out leaves and dirt. Up to 200 litres of water per day can be lost because of evaporation.
- Accept some fluctuation in pool level due to evaporation and rainfall. They will often compensate for each other, meaning topping up with the hose can be avoided or reduced.
- Check the pool for leaks.

WASHING THE CAR, BOAT OR CARAVAN

Use a bucket and sponge to wash the car, boat or caravan on the lawn.



Use the hose only for rinsing and turn it off between rinses. The water and the detergent are beneficial to the garden.

GENERAL

Use the tips in this sheet to help you use water efficiently. Make careful water use, both indoors and outdoors, part of your family way of life.

By using water wisely, you will:

- Reduce the need for new dams and supply systems
- Keep your water bills down
- Make large savings on your energy bills for water heating
- Reduce the risk of water restrictions
- Reduce the impact on the environment.

Be WaterWise.....it's worth it !

WATERWISE GUIDE TO GARDENS

Overall Design

These are generally high water use plants which need a sunny position. Site very tough shrubs on the exposed side to act as a windbreak and protect them. Slowing down the hot dry winds is a very important water saving feature. It will also prevent damage to the more delicate plants.

Planning

Before planting you will need to investigate and analyse:

- Orientation, sun and shade, the prevailing winds.
- Topography, water runoff.
- Soil types, water holding capacity compaction, water repellence, fertility levels.
- Availability of accessible ground water.
- Views both inwards and outwards.
- Overall area available for the garden.

And consider your other needs for:

- Utility spaces (clothes drying, compost and storage areas).
- Outdoor living spaces (barbecues, seating areas).
- Special needs (vegetable garden, swimming pool; etc).
- Functional and aesthetic requirements.
- Plant preference and design styles (native/exotic, formal/informal etc.).
- Maintenance expectations.
- Budget available.

General design principles

- Do not plant areas unless it is necessary for functional or aesthetic reasons.
- Maximise the use of non-planting treatments such as paving and mulches.
- At the same time, beware of excessive unshaded paving which can be hot and glaring.
- Vary materials and arrange planting to frame and shade paved areas.
- Make use of windbreaks, pergolas, screen lattice, shadecloth and vines to shelter the house, outdoor living areas and plants.
- Keep planted areas dense and consolidated. Sparse scattered plants are more difficult to water efficiently than ones that are in defined areas.
- Keep lawn to the minimum consistent with functional and aesthetic requirements.
- Avoid planting lawn on slopes or in narrow necks or paths which are difficult to water efficiently and maintain.
- Garden design blueprints in a variety of themes are available from leading nurseries.

Water Zoning Your Garden

Apply the principles of water zoning to plant selection and arrangement:

- A broad selection of plants may be used, but keep high water-demand plants to a minimum.
- Arrange plants having similar water requirements
 - High water use zone
 - Medium water use zone
 - Low water use zone,

together and take this into account when deciding soil improvement, mulching, and managing irrigation.



Garden Practices

Soil improvement in the garden:

Adding organic matter to the soil improves both its moisture and nutrient holding capacity thus saving on water and fertilizer. It is particularly important to improve the top 15-20 cm of soil where the feeder roots of plants will develop. Old animal manures, compost and proprietary products are ideal soil improvers. Mix them in equal parts with the soil prior to planting out.

Use these points as a guide:

- Shrubs, groundcovers and climbers 30cm in depth and up to half a metre across.
- Trees 40cm deep and 1 metre across and bedding plants 25cm deep for the whole bed.
- Garden soils are just as prone to becoming non-wettable as are lawn areas.
- A regular application of a soil wetting agent in spring is recommended.

Soils for containers (including hanging baskets)

- Choose the best quality potting mix you can afford, preferably one approved by the Australian Standards Association.
- The water and nutrient holding capacity of potting mixes can be further enhanced by the use of water absorbent polymers. Some potting mixes already contain them.
- Most plants are now grown in soil-less mixes which become non-wettable if allowed to dry out. Soil wetting agents are also very useful, and may need to be applied more than once a year.
- A regular application of a soil wetting agent in spring is recommended.

Mulching

Mulching is enormously beneficial for all plants. The mulch should be spread over the entire planted area to a minimum thickness of 50mm.

Organic mulches are preferred because they:

- Break down over time and feed the plants.
- Improve the soil organic matter content as they break down.
- Reduce evaporation loss from the surface.
- Encourage earthworms and soil microbial activity.
- Restrict weed growth. Any weeds which do germinate are easy to remove.
- Prevent wind and water erosion.
- Protect the roots from daily temperature fluctuations.
- Improve the appearance of the garden area.

Mulching material

- Raw water materials like woodchips, chipped tree waste or similar, whether bought-in or homemade, are ideal mulching materials. However, if the mulch is watered regularly you may need to add some extra nitrogen in the form of animal manures, blood and bone etc, to prevent the natural breaking down process from drawing nitrogen away from the plants.
- Materials such as Lucerne hay, pea straw, seaweed and compost can be used for mulch, but since they are more expensive and break down quicker, they are best used within the drip zone of plants.
- Lawn clippings do not make a good mulch, they are best composted. However, if mixed with a coarser material like chipped prunings or woodchips they can be used as mulch.
- Old newspapers can be used under a mulch as a weed control layer, however, thick overlapping layers of newspapers may prevent water penetration.

Applying mulches

- For general garden use mulches should be spread at 50-75mm thick.
- Always leave a breathing space of 50mm around stems and trunks of plants.
- Organic mulches enriched with animal manures are enormously beneficial when applied thickly (to

30cm) around the drop zone of fruit trees. They should be topped up as necessary during spring, summer and autumn to maintain a minimum thickness (after settling) of 15 cm.

- Vegetable gardens should be mulched with “softer” mulches such as compost, pea, hay or Lucerne straw or seaweed.
- In garden areas mulches should be topped up as necessary; perhaps twice a year in both autumn and spring.
- Mulches should never be raked up, turned over, dug in or disturbed in any way. To do so will damage the fine feeder roots which plants develop in the zone between the mulch and the soil.

Changing an established garden

- Most of the high water plants have shallow root systems and can be easily transplanted in winter into their respective groups.
- Hardy, low water and drought tolerant species cannot normally be moved because of their very deep root systems.
- The type, area and location of lawn in the garden can be reconsidered. If you choose to convert some areas of lawn to a lower water use treatment make sure that the replacement plants or ground treatments are more water efficient than grass. Check with your local member of the Nursery Industry Association.

Maintenance

- Do not force plants on with large amounts of strong fertilizers. These produce lush growth that has a high water transpiration rate and is more prone to insect and fungal attack.
- Slow release fertilisers, including animal manures, are the best type. They produce steady, healthy growth and minimal leaching of nutrients into the ground water.

Bedding plants

- Plan your flower beds to be mass displays.
- Do not place a few plants here or there in odd spaces all over the garden, but rather group your flowers together in a suitable area which can be watered independently of other areas of the garden.



TWENTY TIPS FOR A WATERWISE GARDEN

1. Group plants according to water requirements to avoid over-or-under-watering.
2. Use plants that need less water. Plenty of attractive varieties meet this definition.
3. Install new plants when reliable rainfall is expected. In many regions, Autumn is the best time to plant.
4. Build basins around shrubs and trees to limit runoff.
5. Mulch to reduce moisture evaporation.
6. Fertilize properly-too much stimulates thirsty new growth.
7. Pruning keeps plants strong and less water dependent.
8. Prioritize watering. New plants need more frequent watering than established trees and shrubs.
9. Irrigate lawns only when needed. If grass springs back up after you walk on it, it doesn't need water. Or, let your lawn go dormant; most grasses rebound when rains return.
10. Mow higher and less often. Longer leaf surfaces encourage deeper rooting and shade roots. Mowing puts grass under additional stress that requires more water.
11. Water plants when the soil is dry, not before.
12. Use a spring-loaded hose spray or hose-end turn-off device.
13. Adjust sprinklers so water reaches lawns and gardens, not pavement.
14. Inspect sprinkler systems for leaks.
15. Time your watering. Water between 5pm-10am to decrease evaporation. Avoid windy days for the same reason.
16. Water infrequently, deeply, and thoroughly. This stops wasteful runoff and encourages deeper root development. Plants with deep roots develop greater tolerance to dry spells.
17. Install a drip irrigation system. You'll save up to 60 percent of the water used by sprinklers.
18. Move container plants to shady areas. Watering them over the root area of a tree puts excess water to good use.
19. Remove weeds. Weeds rob water and nutrients from valuable plants.
20. Watch the weather. Don't irrigate if rain is predicted. Skip at least one watering after a good rain. Cut back watering times and frequencies in cool and/or humid weather.