

a guide to
watering your garden





We have developed this guide to help you water your garden and install irrigation more efficiently. For a waterwise garden you also need to consider the plants you grow, the soil they grow in, mulches and other gardening practices. For more information visit watercorporation.com.au or see one of our Waterwise Specialists for advice.

four principles of good irrigation

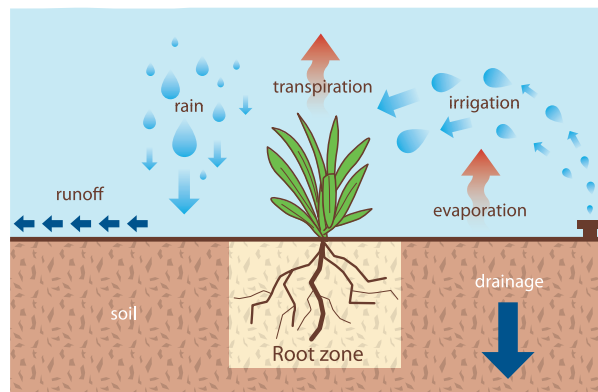
1. Apply the right amount of water for the plants in the soils they are growing in.
2. Time the watering so that it meets the changing weather conditions.
3. Apply the water evenly to all the plants being watered.
4. Apply water only where it is required so that it reaches the root zone of the plants being watered.

just enough water

Plants can only use water where the plant roots grow, for most plants that is in the top 30cm of soil. They cannot use water anywhere else in the soil. This means the plant root zone contains all the water the plant can draw on.

The trick is to manage when and how much you water so that there is always some moisture in the root zone. If it dries out your plants will be stressed and could die. If you overflow it you are wasting water because the extra water is lost through run off or drainage. Run off also carries nutrients, from things like fertiliser, that end up in our waterways contributing to pollution. Most plants do not like waterlogged soil so you risk root rot and disease if you overwater.

The diagram below shows how the amount of water in a garden is constantly changing. A plant draws all its water from the soil so you have to make sure that there is enough water in the soil for your plants to stay healthy.



water in the root zone

Water can be added to the soil through rain or irrigation. It is lost from the soil surface through evaporation and used by plants as they grow naturally, a process called transpiration. It can also run off the surface and drain through the soil. If water runs off or drains past the root zone it is wasted.

The amount of water stored in the root zone depends on your garden's soil type and how deep the root zone is. Your challenge as a gardener is to manage watering so that the amount of water in the root zone stays between empty, the point where the plant dies, and full, the point where water is lost either through drainage, run-off or evaporation. The easiest way to do this is with a modern, efficient irrigation system.

three steps to efficient irrigation

1. Design the system so that it provides the right amount of water for your plants.
2. Install the system to design specifications carefully so that it will operate as it was designed to.
3. Operate the system at the right time for the right amount of time.



designing your system

Prepare a plan of your garden so you can see where you need to water. Designing an irrigation system can be a difficult job, contact a Waterwise Garden Irrigator for professional help.

hydrozones

Different areas of the garden have different water requirements. Lawns have different watering requirements to garden bed areas. Areas planted with native plants have different water requirements to other plants. The areas of different water requirements are hydrozones. An important part of water efficient irrigation design is to identify hydrozones and water them on separate stations or zones.

mains or bore

Garden bores can save money as well as our precious drinking water. To find out whether a bore is suitable for your garden, consult the Department of Water's 'Groundwater Atlas for Perth'. Once you have determined that a bore is appropriate, contact a specialist Australian Drilling Industry Association (ADIA) driller or a Waterwise Garden Irrigator.

water flow and pressure

A simple way to test your water flow is to measure how long it takes to fill a standard 10 litre bucket. If it takes 1 minute to fill the bucket then you know that water flows from the tap at 10 litres per minute or 600 (10 x 60 minutes) litres per hour. This determines what type of watering device you can use, how many you can use at one time and therefore how much water will be applied by your irrigation system. For a more accurate flow and pressure test, contact your local Waterwise Irrigation Design Shop.





















connecting to mains supply

The highest available water flow on your property is likely to be close to the water meter. Commonly the most cost-effective garden watering system would involve a plumber's connection close to this point. Whilst your home may have taps for both front and back to which a system can be connected, the lower water flow rates at these points means that a system often has to be split up into more stations. A connection to your mains must be carried out by a licensed plumber, who must also install a double-check backflow prevention device at the connection point.

choosing an irrigation system

There are lots of ways to water your garden, ranging from buckets and hoses with sprinklers and nozzles attached to fixed sprinkler and drip systems with automatic controllers. The table below is a guide to different types of equipment and its ability to meet the basic principles of good irrigation.

Efficiency rating¹  poor  very good

Irrigation devices ²	Applying the right amount	Even watering	Water to root zone
 Dripline			
 Sprayers / rotating sprinklers			
 Microjets			
 End-of-hose sprinklers			
 Hand-held sprayers			

¹ The ratings in this table are based on the irrigation system being correctly designed, installed and operated.

² Any watering device including a nozzle on the end of a hose, a sprinkler on a hose, a dripper, a fixed sprayer or a pop up sprayer. It is the piece of equipment that directs water onto the garden.

garden watering tips

- Install a rain sensor if you have an automatic irrigation system. It will prevent your automatic irrigation system from watering unnecessarily either during or soon after rain.
- Space your sprinklers so that your garden is watered evenly.
- Use a tap timer, it will help you to control the amount of water applied to your lawn or garden.
- Design your irrigation system so that you can water the hydrozones in your garden on different stations. This way your plants will get the water they need without wasting it.
- Do not mix different types of sprinklers on one watering station, they emit different volumes of water and have different run times. By making sure every sprinkler in a station is the same you will optimise the amount of water penetrating the root zone, without wasting water.
- A drip irrigation system is water efficient and works well for native and other waterwise plants. Install a pressure regulator if you experience low flow rates and a filter to prevent drippers from clogging.
- Make sure you install the right number of sprinklers on one line. Too many may result in not enough water pressure and too few may lead to high water pressure and water being wasted.
- Do not choose sprinklers that will apply more water than your soil can absorb. Different soils hold different amounts of water and may require different watering rates. It is important to know the type of soil and the type of plants you are watering, so that you can choose the right sprinkler.
- Position sprinklers so that they only water your garden. Overspray on to the road or nearby buildings is a waste.



installing your system

1. Before you begin, get your finished design and all the parts. Ensure you have everything you need and you know where each piece should go.
2. Mark out and dig your trenches.
3. Start at the water source, connect your master solenoid valve (if installing automatic system) and then install the mainline. Flush the mainline before installing any solenoid valves so that you don't have dirt and rubbish in the pipes.
4. Remember to install any wiring with the mainline placing it in conduit or burying it under the mainline to protect it.
5. Install lateral lines and, finally, the sprinklers themselves. Don't install any nozzles until you have thoroughly flushed each station. Solenoid valves may have to be operated manually until you have made final connections to the controller.
6. Fit nozzles and make sure each station waters evenly.

For professional assistance please contact your local Waterwise Irrigation Design Shop or a Waterwise Garden Irrigator.

did you know?

A waterwise irrigation system is the most effective way to water your garden and will help you save water and money.



operating your system

Water is wasted in three ways:

1. Through evaporation and wind drift.
2. Putting water where it is not needed, such as onto paths or buildings.
3. Watering for too long.

check your system regularly

Make sure sprinklers and sprayers are pointing in the right direction, drippers are working and that the system is working at the right pressure (no misting from sprinklers, pressure too high, or streams of water, pressure too low).

reduce evaporation

Water in the morning to help reduce waste from evaporation and wind drift. Watering early allows the water to soak into the root zone and be available to the plant throughout the day when they need it most.

how often should you water?

A permanent winter sprinkler ban applies to all scheme and bore water users in Perth, Mandurah and some parts of the South West, from 1 June to 31 August each year.

Watering rosters and a statewide daytime sprinkler ban between 9am and 6pm are in place across Western Australia.

To find out your watering days, visit watercorporation.com.au or contact the Waterwise Helpline on **13 10 39**.

how long should you water?

Water just enough to penetrate the root zone, most plant roots are found in the top 30cm of soil.

10mm is the standard drink for your garden to penetrate the root zone and is the recommended maximum application per watering day. Different types of sprinklers have different watering rates. The table on the next page shows the recommended watering times to apply 10mm of water to your garden for a range of sprinklers. Watering for longer will just waste water.

Remember to program your irrigation system to suit current climate and seasonal conditions. The aim of a water efficient irrigation system is to deliver the right amount of water at the right time.





Different soils can hold different amounts of water and may also require different watering rates. You can improve your soil's health and water storage capacity with organic or mineral soil improvers. You can often find soil improvers that also contain wetting agents, which help water penetrate to the roots of your plants.

If you are not sure of the type of soil in your garden take a sample to your local nursery for professional advice. Applying the right amount of water for your soil type will help you keep your plants healthy and save water.

For more information see our *Water Saving Ideas – Soil Improvement* brochure at watercorporation.com.au



sprinkler watering times

Sprinkler type	Typical watering rate (per hour)	Run time for 10mm (standard drink)
 Fixed Spray	35 – 45mm	13 – 16 mins
 Dripline	15 – 20mm	30 – 40mins
 Gear-Drive Rotator	10 – 20mm	30 – 40mins
 Rotary	10 – 15mm	40 – 60mins

more information



For professional advice, visit our website to find a Waterwise Specialist near you. They include Garden Designers, Garden Centres, Garden Irrigators, Irrigation Design Shops and Landscapers. Waterwise Specialists have been trained especially to help you save water by providing specialist advice on waterwise products and services for your home and garden.



Look for the Waterwise Approved and Smart Approved WaterMark symbols when choosing gardening products such as mulch, plants, greywater systems and sprinklers.





13 10 39 Waterwise Helpline

13 13 85 Customer Centre
(8am - 5pm weekdays)

13 36 77 National Relay Service

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This information is available in
alternative formats on request.

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