A SUSTAINABLE GARDEN

The garden you tend should reflect the site's climate, geography and soil type. When starting a garden consider initial start up costs and continual maintenance costs, water use, potential runoff, green waste, pesticide and fertilizer use, greenhouse gas emissions, and the benefits and improvements that the garden will add to the environment and living space.

Making our yards and gardens sustainable and water-efficient is an easy way for us to make a big impact in the fight to save our water. We can't live without using water to hydrate us and grow our food, but lawns and gardens are less essential. Gardens can offer respite and visual pleasure, and help cool our cities. Creating gardens that are well adapted to the local climate can provide the same benefits with far less water.

Sustainable gardening often requires less maintenance, costs less, and can create spectacular, eye-catching displays of native plants and flowers that are attractive and beneficial for local wildlife. This strategy saves water, time, and money.

FOUR PRINCIPLES FOR SUSTAINABLE GARDENING –

- Garden where you are with the right plants for the climate
- Use highly efficient irrigation when necessary.
- Build healthy living soil.
- Capture rainwater as a resource.

THREE TERMS TO KEEP IN MIND WHEN PLANNING A GARDEN

Every yard is different. Every yard has its own microclimates, slopes and hills, grass and plant history, soil makeup, and generally, different amounts of sun, shade, and water in different areas. When you are converting your yard to a low-water friendly garden, you will want to take advantage of all of these elements by creating hydrozones and considering swales and watersheds.

HYDROZONE - A section of a yard or garden where plants with similar water needs are grouped together. This way, you can tailor the amount and frequency of irrigation and avoid overwatering plants that need less. If you only have a small level space, you may only have a single hydrozone, with plants that all have similar water needs. Dividing your yard into hydrozones is the first step to creating a drought-tolerant, low-water garden, wherever you live. Hydrozoning is especially useful in yards with varying degrees of slope, drainage, soil types or sun and shade areas. To minimize water use and maximize plant health, you would place plants with lower water needs in the areas that will have longer sun exposure and less (or no) supplemental irrigation. Plants that need more water might go in areas with partial shade, where the moisture will be retained longer. Lower elevation areas or areas where runoff collects are great spots for plants that need, or can tolerate, wet soil. Otherwise you would need to manage watering and drainage. When creating a brand-new low-water garden, choosing plants appropriate for your climate would create a thriving garden with minimal maintenance and extra water needed.

HYDROZONE 1- Sloped area, full sun—plants with lowest water needs
HYDROZONE 2- Mostly full sun; some foot traffic; turf grass alternatives.
HYDROZONE 3- Near house, so plants most visible; partial sun; cluster plants with higher water needs.
HYDROZONE 4- Close to house and entry; full sun; lower elevation, so some runoff/drainage collects here; use plants that can tolerate more water, less well-drained condition; good location for a deciduous tree for summer shade.
HYDROZONE 5- Full sun, away from entry; use taller, low maintenance plants and water needs.

SWALE - A swale is a low tract of land, especially one that is moist or marshy. The term can refer to a natural landscape feature or a human-created one. Artificial swales are often designed to manage water runoff, filter pollutants, and increase rainwater infiltration.

WATERSHED - A watershed is an area of land that water, such as rain or melted snow, flows through, including water that runs underground or downhill into a stream, river, lake, or ocean. Watersheds are conventionally separated by mountain ranges and can be large or small. Watersheds can also connect to become larger watersheds.

GETTING STARTED

- Draw a simple sketch of your yard, separating out the major areas and features you have or would like to have.
- Groundcover plants, especially ones planted as lawn substitutes, should be zoned separately from planting beds, because they will likely require less water from most plants in beds.
- Trees and shrubs generally need deep watering less frequently and should be in their own zone.
- If you plan on adding specific plants that require higher amounts of water, such as roses, group these together in a way that makes irrigation easy and efficient.
- If you plan to include a section of lawn, consider limiting it to where you will most enjoy it and can meet its higher water requirements more easily.

PLANTS - The first step in creating a low-water garden is to use plants that are appropriate to your regional climate. Plants that are adaptable to typical rainfall patterns of the area will flourish with much less water and work. Know "your climate zone", and create a list of plants you like based on what's appropriate in your region.

Many beautiful low-water plants grow and thrive in summer-dry climates. They can add color, interest, and variety to gardens. Planting a mixture of native shrubs, grasses, and perennials will help you use less water, and create a landscape beneficial for local wildlife. All plants need additional water until they are established. Wherever you live watch out for invasive plants that may be drought-tolerant but can be garden bullies outside their natural range. These can create havoc not just for your garden, but for natural areas around you, where invasive plantings can destroy wildlife habitat, clog streams, and create fire hazards.

The most important, rare and valuable resource you will need for your garden is water. Low water gardening will only gain in importance as time goes by. Soil should be a sponge that collects and stores water. Water needs to flow through soil not over it. Proper drainage, adequate watering not over watering and a good understanding of the climate and planting environment will all help your garden thrive.

Use a highly efficient irrigation system only when necessary. If it's possible in your area, irrigate with water collected via a rain collection device or a "greywater" system. **Greywater** is gently used water from your bathroom sinks, showers, tubs, and washing machines. It is not water that has come into contact with feces, either from the toilet or from washing diapers. **Greywater** may contain traces of dirt, food, grease, hair, and certain household cleaning products.

New plants will require additional watering for the first year, but after that, your low-water garden should generally require watering at most twice per month, and only during the driest season. The type of irrigation you use should depend on which area of the garden your plants are in. If you have clustered plants with similar water needs and similar conditions together, you can easily adjust the amount of water each area receives, and you may choose different irrigation equipment or methods as well.

Hand watering with a hose is often the most efficient method or you may be interested in timed, or automated watering devices. Generally, drip irrigators or rotating spray head nozzle are good for most gardens. Irrigate at sunrise or sunset. Soil absorbs the most water when the temperatures are lower. All irrigation methods are inefficient if used incorrectly.

When you plan to completely redo your garden or convert it slowly to a more water-efficient area, follow these steps to quickly save time, money, and water.

- Mulch - Apply 3-4" of mulch around valuable water-stressed plants you want to keep.
- This minimizes water loss due to evaporation and reduces irrigation by up to 50%!
- Weed - Remove invasive plants and weeds that take water away from your plants.
- Clean up – Use brooms not blowers, buckets instead of hoses.
- Schedule – Sprinklers should run for about 10 minutes, then be off for about 10 minutes to let water fully absorb into the soil. Drip irrigation will need to run longer due to the slow rate it releases. water but it doesn't need to be staggered.
- Sink In – Where possible, replace concrete surfaces with permeable brick, stone, or gravel for areas with no plants. This helps your garden capture rainfall for underground aquifers.
- Aerate - Adding holes to your lawn keeps it moisture-absorbent and healthy.
- Compost – A compost bin or pile will help you add healthy, organic matter to your garden.
- Test - Use a probe to check soil for dampness and water only when absolutely necessary.
- Replace - Update your irrigation system when outdated for maximum efficiency.
- Wait - Don't overwater plants that look fine in the morning, but wilted or stressed in the midday sun. This is a common occurrence known as physiological drought.

Sustainable gardening is an effective way to make an impact on protecting precious resources by creating an environmentally friendly garden designed with your regional weather and rainfall patterns in mind.