THE UNIVERSITY OF ARIZONA
Cooperative Extension
Master Gardener

Irrigation

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SaddleBrooke and SaddleBrooke Ranch Master Gardeners

Climate

The water needs of plants can be subject to factors such as temperature, wind, sun rainfall, and relative humidity. These change with the seasons. The higher the temperature, the more water loss occurs from plants themselves and the soil, and thus, the greater need for supplemental water. This means a higher frequency of irrigation in the Summer, less in the Spring and Fall, and minimal in the Winter.

Wind can certainly have a drying effect on plants and the soil, and here in the Sonoran Desert, we encounter frequent windy conditions which will serve to increase the need for supplemental water especially when the weather is dry and warm. While many native plants thrive in the abundant sunshine here, full sun increases water loss and the need for additional water, where as part or full shade will decrease the need for supplemental water since it will take longer for the soil to dry out.

In SaddleBrooke/SaddleBrooke Ranch we average only 11-12 inches of annual rainfall with most of it occurring during the Summer Monsoon or Winter Seasons. During the extended dry periods even native or desert adapted plants will benefit from some supplemental irrigation, but keep in mind, a rainfall of .5 inches or more can allow us to skip and irrigation event. The relative humidity is generally quite low in the desert which can also be a factor in water loss from plants and soil increasing the need for additional watering.

There are actually five seasons in the Sonoran Desert. In addition to Spring, Summer, Fall, and Winter, there is the Monsoon Season which occurs in July, August, and September. Around half of our annual rainfall can take place during the Monsoon and at times take the place of supplemental irrigation.

Soil

The major component of SaddleBrooke/SaddleBrooke Ranch soils is clay which tends to be slow to wet, and once saturated, slow to dry out. When water is heavily and quickly applied as with overhead irrigation or a heavy shower, it tends to run off especially on slopes. This is why drip irrigation is ideal for our soils since it applies water slowly where it is needed allowing the moisture to penetrate deeply. Once it is wet, clay is slow to dry out which allows more infrequent irrigation. The rock mulch, which is common here, also serves to retain moisture by serving as an insulating barrier.

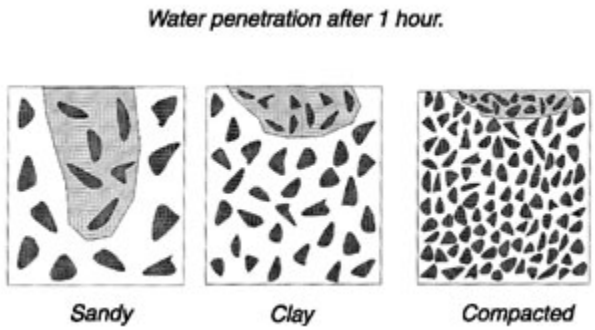

Figure 1 AZ Cooperative Extension Pub 1298

When an area of soil refuses to drain and stays unusually wet it is likely due to a calcium carbonate deposit in the soil called caliche, which forms a barrier impervious to water and not allowing the soil to drain. Unless this caliche is removed or penetrated to allow for proper drainage plants are unlikely to survive in the wet conditions.

Plants

The type of plant material in the landscape will determine water needs. Trees generally require irrigation to a depth of around 36 inches, shrubs 24 inches, and smaller plants (annuals, perennials, roses, groundcovers, vegetables, cacti and succulents) 12 inches. Following irrigation, one can use a soil probe, piece of rebar or long screwdriver to determine water depth. The device will easily insert to the depth of water penetration and abruptly stop once it hits dry soil.

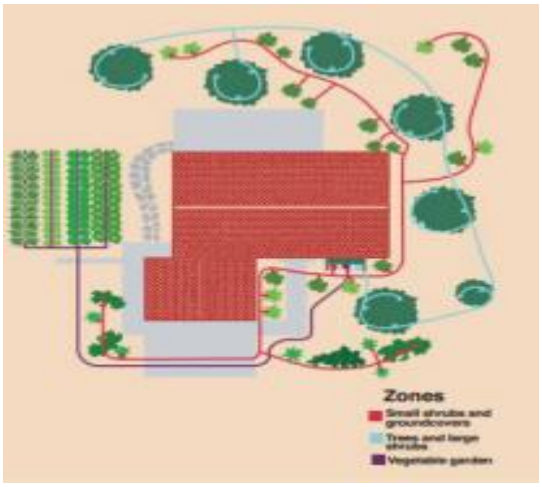

Figure 2 AZ Cooperative Extension Pub 1392

Varieties of plants have differing water needs as well. Once established, native and desert adapted trees, shrubs and flowers can survive with rainfall in the desert. Some supplemental irrigation will serve to enhance growth and appearance. This can vary from once a week during the Summer heat to once every 14-21 days in the Spring and Fall, and once a month in the Winter.

Non-desert adapted plants require more water to ensure health and vigor. They need to be irrigated once or twice a week in the Summer, every 7-10 days in the Spring and Fall, and once every 2 weeks in the Winter during dry periods. High water users such as flowers, roses, and vegetables require irrigation every day or two in the Summer while reducing frequency from there in the Spring, Fall and Winter. Containers dry out the fastest requiring water every day or two in the Summer for non-desert adapted plants to every week for cacti and succulents. Cacti and succulents are the water conservation champions being able to store water in their stems roots and leaves. They require supplemental water no more than every week in the Summer to none in the Winter unless there is an extended dry period.

It is important to remember that newly transplanted plants require more frequent watering to assist in establishing root systems. As a rule of thumb, water daily for one week following transplanting, every other day for the next two weeks and twice a week for another two weeks. At this point regular watering should suffice. Transplanted cacti should not be watered for at least a day or two in the Summer and up to a week in the Winter to allow damaged roots to heal to avoid rotting.

It is important to note that too much water can be as detrimental as to little so it is important to consistently check the health of plants in the landscape and the soil moisture with a probe. With containers, check to top couple of inches for moisture with a finger and water only if it is dry.