

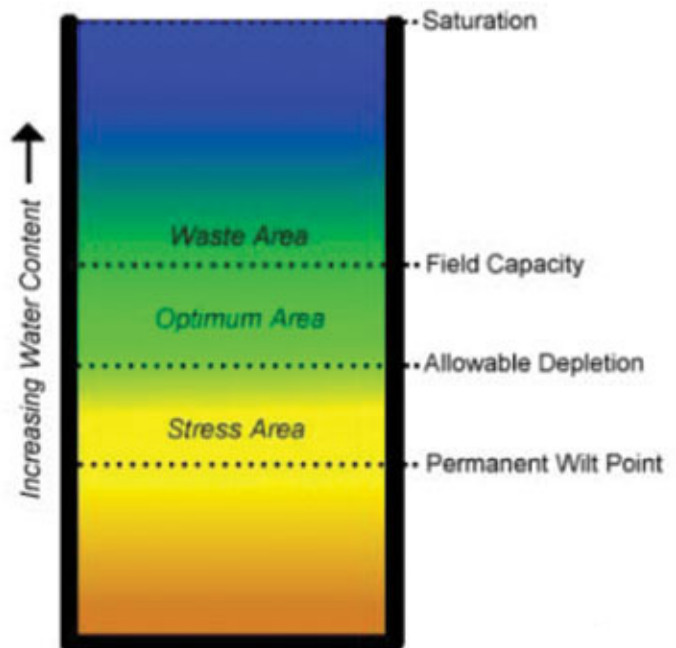
## How water is wasted in landscape irrigation

Soil is like a sponge. If a sponge is immersed in a bucket of water it becomes **saturated**. If you remove it from the bucket, water will run out of it—rapidly at first, then it will drip for several hours. When the sponge stops dripping, it will still be very wet; in fact, a large quantity of water will still remain in the sponge, but gravitational forces are not strong enough to draw it out.

The same thing happens when you water your lawn. If too much water is applied, then the soil becomes saturated and your shoes will slosh as you walk across it. When the soil is saturated, water quickly percolates down into the subsoil carrying all of your expensive fertilizer with it, just like the sponge drips back into the bucket. When the dripping into the subsoil stops, the water content of the soil has reached **field capacity**. At this point, the soil has plenty of water to nourish your lawn. Roots have no problem in drawing out the water through capillary action. If you water your lawn enough to be above the **field capacity**, all the excess water you have applied above that level will be wasted.

As the soil dries out, the capillary "suction" required to extract water increases causing the plant to work harder and harder. If the soil moisture is not replaced, the capillary force becomes too great for the plant to draw water, causing the plant to die. This point is called the **permanent wilting point**. You need to keep the moisture content well above this level to prevent **stress** to your plants. The level at which the plant is stress-free is called the **management allowable depletion** level. In typical soils, the difference between the management allowable depletion level and the permanent wilting point is only 6%. If you allow the soil to dry below the management allowable depletion level, your lawn will begin to

brown. If you maintain the moisture content of the soil in the **optimum area** between the allowable depletion level and the field capacity, you will have a very healthy lawn, you will not waste water, you will retain the nutrients around the roots, and you will avoid percolating herbicides, pesticides and chemical fertilizers into your local groundwater. You will also save a lot of money on your water bill.



## How to maintain soil moisture within the "optimum area"

The Nelson by Acclima Precision Irrigation system is based on an extremely precise soil moisture sensor, the Digital TDT™. Using this technology, turf managers can easily maintain optimum levels of moisture in the soil without wasting a drop. For more information on our complete line of irrigation controllers and a detailed technological description of the Nelson by Acclima patented sensor, see our web site.