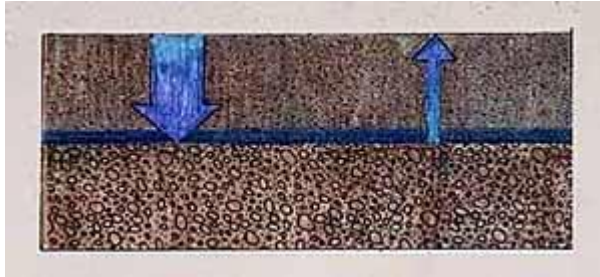


Water Tables

Perched Water Table



Picture courtesy of A.J. Turgeon PhD

A perched water table is a layer of fine textured soil particles over a layer of coarse textured soil particles. Water moves through the fine textured layer and stops when it reaches the coarse textured medium. Water only moves across this interface as pressure increases due to saturation in the finer layer.

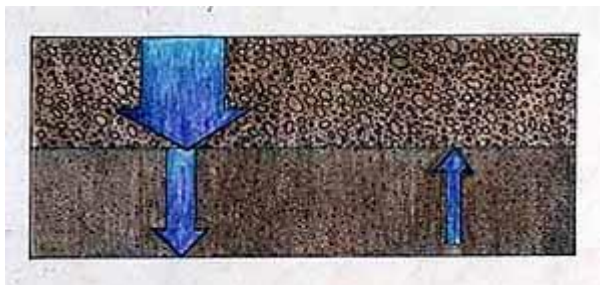
Positive aspects:

A perched water table is the basic premise for construction of athletic fields and golf greens. It can provide an ideal growing environment if the rootzone is deep enough to support plant roots. Generally, these rootzones range from 10 to 12 inches in depth. Perched water tables allow a soil to retain water effectively so it is available for uptake by the plants.

Negative aspects:

Sometimes a perched water table can occur as a result of layering in a rootzone by the application of a finer textured medium over a coarser textured medium. This can happen with topdressing if the topdressing particle size is not matched to the existing particle size on the field. If layering occurs, water and roots can be confined to a shallow area.

Temporary Water Table



Picture courtesy of A.J. Turgeon PhD

A temporary water table is a layer of coarse textured soil particles over a layer of finer textured soil. Water can only move through the coarse textured layer at the rate of the underlying finer textured soil. A temporary water table develops when water is entering the coarse layer more quickly than the fine layer. The temporary water table remains until the fine layer can absorb the water.

Positive aspects:

Temporary water tables are desirable when building a 4 to 6 inch sand cap on athletic fields. This provides enough depth for plant roots and sufficient water holding capacity.

Negative aspects:

Once water is absorbed into the underlying fine layer, it is no longer available to the overlying coarse layer. If a topdressing material has coarser particle size than the existing soil on the field, over time a temporary water table can form. This can result in shallow rooting and potential for heat stress.