

## Soil Drainage or Wetness Class

Soil drainage class reflects the presence of free water or a water table in the soil. Whether a water table occurs or not is best determined using measurements made from wells. Such data are rare for soils, in part because such data should be collected one or more times a month for several years to ensure that observations include an "average year" of rainfall.

In place of water table data, the depth to gray color or gray mottles (colors having chromas of 2 or less and values of 4 or more) can be used instead to approximate the depth to the seasonal high water table.

Soil drainage class is in essence determined by the estimated depth to the seasonal high water table. Definitions of the classes that will be used in this course are as follows:

**Excessively Drained:** Water is removed very rapidly and water holding capacity is very low. Soils are usually very sandy or gravelly or are shallow on steep slopes. Irrigation would be needed for crop production.

**Well Drained:** Seasonal High Water table is not within the rooting zone long enough during the growing season to adversely affect yields. **Gray colors** or gray mottles are absent in the A and B horizons or occur **below 48 inches (122 cm)**. The B horizon is usually uniform in color.

**Moderately Well Drained:** Seasonal High Water Table is within the rooting zone for a sufficiently long period of time to adversely affect some crops unless the soil is artificially drained. **Gray colors** or mottles occur in the lower B and/or C horizons begin between **24 and 48 inches (61 to 122 cm)**.

**Somewhat Poorly Drained:** Seasonal High Water Table is near the surface for periods long enough to affect yields unless an artificial drainage system is installed. Gray colors begin at depths of **12 to 24 inches (30 to 61 cm)**.

**Poorly Drained:** Seasonal High Water Table is at or near the surface during a large part of the year. The **A horizons are thin (<10 inches, <25 cm)**, dark gray to black, and subsurface horizons are dominantly gray beginning at approximately **10 inches (25 cm)** or just below the A horizon.

**Very Poorly Drained:** Seasonal High Water Table is at the surface most of the year. The A horizons or O horizons are usually **thick (>10 inches, >25 cm)**, dark gray or black, and **subsoils are gray**. Note that thick A or O horizons and gray subsoil are used to identify this class, not simply gray mottles. These soils can be found on flat landscapes or in depressions. They are frequently flooded or ponded.

*In A, E, and some C horizons gray colors can occur which are not related to seasonal high water table. Gray colors that are related to the seasonal high water table should be associated with red or brown mottles in these horizons.*