



WOW: Watersheds

WHAT DO HYDROLOGIC SOIL GROUPS TELL US?

VOCABULARY

clay pan	A dense, hard layer of soil usually found below the uppermost topsoil layer
hydrologic	Having to do with water, the properties of Earth's water and the water cycle
infiltration rate	The measure of the rate at which soil is able to absorb rainfall, runoff and/or irrigation
runoff	The draining away of water from the surface of the land, building or structure
shrink-well potential	The ability of soils to get smaller (shrink) or larger (swell) as soil water content increases or decreases
water transmission	The ability of water to move through soils

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when soils are not protected by vegetation, are thoroughly wet and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C and D) and three dual classes (A/D, B/D and C/D). The groups are defined as follows:

Group A: High infiltration and water transmission – sandy soils.

Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B: Moderate infiltration and water transmission – mix of moderately fine and coarse soils.

Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

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Group C: Slow infiltration and water transmission – fine soils that can impede water flow.

Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D: Very slow infiltration and water transmission – clay or nearly impervious soils.

Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a clay pan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

For more information and to view an ArcGIS Soil Hydrology Map, visit,
<http://resources.arcgis.com/en/communities/soils/02ms00000008000000.htm>