Distribution and Movement of Water Underground

* much of the water in soil seeps downward until it reaches the zone of saturation
* the zone of saturation is the area where water fills all of the open spaces in sediment and rock
  + groundwater is the water within this zone
  + the water table is the upper level of the saturation zone of groundwater
* Movement
  + groundwater moves by twisting and turning through interconnected small openings
  + the groundwater moves more slowly when the pore spaces are smaller
  + Aquifers are permeable rock layers or sediments that transmit groundwater freely

- Springs

* a spring forms whenever the water table intersects the ground surface
* hot springs
  + water is 6-9 degrees celsius warmer than the mean air temp of the lacality
  + water is heated by coojing of igneous rock
* geysers
  + intermittent hot springs
  + water turns to steam and erupts

- Wells

* a well is a hole bored into the zone of saturation
  + an artesian well is any formation in which groundwater rises on its own under pressure
  + pumping can cause a drawdown (lowering) of the water table
  + pumping can form a cone of depression in the water table
* Environmental problems
  + overuse and contamination threatens groundwater supplies in some areas

- Caverns

* a cavern is a naturally formed underground chamber
* erosion forms most caverns at or below the water table in the zone of saturation
* travertine is a form of limestone that is deposited by hot springs or as a cave deposit
* characteristics of features found within caverns
  + formed in the zone of aeration
  + composed of dripstone
  + formed from calcite deposited as dripping water evaporates
  + common features include stalactites and stalagmites
* Karst Topography
  + formed by dissolving rock at, or near, Earth's surface
  + common features
    - sinkholes- surface depressions
    - caves and caverns
  + are lacks good surface drainage