

Water cycle

[Literature](#), [Russian Literature](#)



Water Cycle affiliation Water Cycle Water cycle or hydrologic cycle is the process where water moves above, on and in the surface. As the water goes through the cycle, it transforms from liquid to gas and then to ice. The process is then reversed. The earth depends on the water cycle to support life. The water cycle does not have any starting point, but the process begins where a large body of water exists like an ocean. The sun evaporates the water into the atmosphere. The vapor is formed through the process of evaporation. The vapor is taken up into the atmosphere and as it rises into air with cooler temperatures, it condenses to form clouds. The water then return to the ground inform of liquid (rain) or solid (snow, sleet) precipitation. The water that results from the rain flows back into rivers as surface runoff and groundwater. The stages involved in the water cycle include evaporation, condensation, precipitation, and runoff and groundwater flow. Evaporation occurs when the sun radiant energy heats up the water from the surface changing it into vapor. The vapor enters the atmosphere in a gaseous form. Transpiration is also part of the process whereby plants releases water through the leaves after intake in the roots. When both evaporation and transpiration occur, evapotranspiration emerges (Gardner, 2011). Evaporation acts as a purification process. The salty water from the sea or ocean evaporates into steam that is pure water.

Condensation is an important phase of the water cycle. The water vapor condenses to form tiny droplets that are responsible for cloud formation. The clouds are responsible for the precipitation.

After the clouds form, the water drops from the atmosphere in form of rain, snow, hail or sleet in a process called precipitation. Clouds are an important

part of the precipitation process because raindrops are the drops of the cloud that had condensed from vapor. As condensation adds more water to the cloud particles, gravity pulls them down which results into precipitation. When the rain hits the ground, much of the water infiltrates into the ground becoming groundwater. This will depend on the terrain where the rain drops. If the surface has more openings (cracks, joints), then more infiltration will occur. However, if the water does not infiltrate the soil, then it flows on the surface as runoff. The water flows into rivers that later empties back into the ocean and the whole water cycle begins again.

UAE is a country with hyper-arid climate that is associated with high temperatures and infrequent irregular low rainfall. This means that it experiences high evaporation that lead to less rainfall and therefore low groundwater. The water cycle therefore does not favor much the country that meant that they had to come up with ways to influence the water cycle. The country has to adopt water recycling in urban areas (Lazarova, Asano, Bahri, & Anderson, 2013). The government was able to come up with modern irrigation techniques to utilize the groundwater aquifers. The plants would contribute in the water cycle through transpiration. According to Lazarova, Kwang-Ho, & Peter (2012) desalination of both seawater and inland water has been useful as a source of water supply. An initiative of planting trees in the region started as a great step towards changing the water crisis in the country. Trees are involved in the transpiration process that can help boost the water cycle. Water harvesting was necessary through the construction of dams to meet the local agricultural water demands and reduce the water losses to the ocean.

References

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