

Essay on hydrologic cycle

[Environment](#), [Pollution](#)



The hydrological cycle depicts the movement and existence of water above, in, and on the Earth. Water on earth is always under constant movement, and its states always vary from solid to liquid to vapor. The hydrological cycle has no starting point, but it is assumed it begins mostly in large water bodies such as oceans. The process kick starts when the sun heats water in large bodies, which in turn evaporate as vapor into the atmosphere. Due to low temperatures, ice and snow at times can directly sublime into water vapor, which collects with other rising currents from plants and soil, where cooler air condenses it into clouds (Farmer, 1997)

Deep ocean water takes long time to circulate through hydrologic cycle due to effect of temperatures on water. Deep ocean water is often cold due to its distance from the water surface, and requires energy in form of heat for it to rise. Without availability of underwater sources of heat such as sporadic volcanic activity or geysers, movement of any inversion would take place very slowly, if at all it takes place. Another school of thought asserts that deep ocean water may take long time to circulate through the hydrologic cycle due to effect of gravity. Large blanket like sheet of water in oceans makes the upper part susceptible to gravity, a key component in the cycle, thus leaving the deeper parts (Clark, 1997). The deeper parts are more dense than the upper part, hence the notion that “ lighter products travel faster than heavier ones”.

Pollution is a key predicament affecting the ocean and majority of underground water sources. Pollution in oceans mostly alters the normal functions of water bodies, and affects living organisms both directly and indirectly. Major pollutions in deep ocean waters include toxic wastes, oil

spills, and other harmful materials such as silt, plastics and industrial effluents.

When these contaminants are not removed from the ocean water, their effects are either short term or long term. Short term damages relates to contaminants that are biodegradable, while for others the rate decomposition depends on the type of material the contaminant is made of. Some non bio-degradable contaminants remain dormant in ocean floor, while others are absorbed into the food chain, where they are transferred from one organism to another, where the severity of contaminant increase with specific half -life from one organism to another (Gorman, 1993) .

Contaminants taking longer times to degrade are amalgamated in ocean floor rocks and corals where they form ocean beds. Penetration of these contaminants in Deep Ocean make it hard to clean up as they are absorbed in porous rocks, and tend to spread into the food chain. Generally there is no universal solution or answer that would be relevant to all contaminants (Clark, 1997).

References

Clark, R. (1997). Marine Pollution, 4th ed. New York: Oxford Press

Gorman, M. (1993) . Environmental Hazards: Marine Pollution. Santa Barbara, CA: ABCCLIO.

Farmer, A. (1997) . Managing Environmental Pollution . New York: Routledge.