

Editorial on Biogeochemical Cycle

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Editorial

A biogeochemical cycle is a process by which a chemical material is exchanged or moves between Earth's biotic and abiotic compartments. Biogeochemical cycles exist for the chemical element's calcium, carbon, hydrogen, mercury, nitrogen, oxygen, phosphorus, selenium, iron, and sulphur, as well as molecular cycles for water and silica, macroscopic cycles like the rock cycle, and human-induced cycles for synthetic compounds like polychlorinated biphenyls. Many biogeochemical processes, such as the water cycle, carbon cycle, nitrogen cycle, and others, operate as part of ecological systems (ecosystems). Biogeochemical cycles include all chemical elements found in living organisms. The nutrients used by living organisms in ecosystems, such as carbon, nitrogen, oxygen, phosphorus, and sulphur, are part of a closed system, which means they are recycled rather than lost and replenished on a regular basis, as in an open system. Carbohydrates, fats, and proteins, the main sources of food energy, all contain carbon. These compounds are oxidized, releasing carbon dioxide, which plants may use to produce organic compounds.

The chemical reaction is fueled by the sun's light energy. Despite the fact that the Earth absorbs energy from the sun on a continuous basis, its chemical composition is fundamentally fixed. Since this chemical composition is not replenished in the same way as energy is, all processes that depend on it must be recycled. Both the living biosphere and the nonliving lithosphere, atmosphere, and hydrosphere are included in these cycles.

Chemicals are often held in one location for extended periods of time. This location is referred to as a reservoir, and it contains items like coal deposits that store carbon for a long time. Chemicals are stored in swap pools because they are only held for a brief period of time. Plants and animals are examples of swap ponds.

Carbon is used by plants and animals to make carbohydrates, fats, and proteins, which are then used to create internal structures or obtain energy. Plants and animals use carbon in their processes for a short time before releasing it into the air or surrounding medium. Reservoirs, on the other hand, are abiotic causes, while exchange ponds are biotic.

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