

1) Gaseous nitrogen is the most abundant element in the atmosphere and its global circulation provides an inexhaustible reservoir for the nitrogen fixing organisms which supply about all of the nitrogen utilized by plants. The quantity of nitrogen utilized by plants in ~~the~~ the living or dead organic matter is small compared with the total capacity of the atmospheric reservoir, a characteristic in which nitrogen differs from carbon cycling. The nitrogen cycle may thus, be divided into a simple gaseous reservoir of enormous capacity and a complex soil based cycle which is localized and of small magnitude. In most ecosystem the Nitrogen-fixation step is rate limiting and plants are in strong competition for soil nitrogen. Under these circumstances the rate of N-recycling within the system is very important for example in some peat soils, a high percentage of the ecosystem N is immobilized as organic matter in the soil, thus limiting primary production and energy flow. By contrast many tropical rain forests have the majority of available N in the standing crop recycling from litter fall extremely fast and the ecosystem has high energy throughput.

The Nitrogen cycle is geochemically stable and not easily disturbed by loss to some inaccessible pool, such as sedimentary deposits of insoluble compounds.

which disrupt the Phosphorus cycle. The stability is mainly due to the buffering effect of the very large atmospheric reserves, but also the efficiency of the denitrifying process in most soil environments.

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