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THE CONCEPT OF SEDIMENT TRANSPORT AND HOW IT AFFECTS COASTAL AREAS.

Concept of sediment transport

The simplest definition of sediment transport is the transport of granular particles by fluids. The main agents by which sedimentary materials are moved include gravity (gravity transport), river and stream flow, ice, wind, and estuarine and ocean currents. Running water and wind are the most widespread transporting agents. In both cases, three mechanisms operate, although the particle size of the transported material is very different, owing to the differences in density and viscosity of air and water. The three processes are rolling or traction, in which the particle moves along a sedimentary bed but is too heavy to be lifted from it; saltation; and suspension, in which particles remain permanently above the bed, sustained there by the turbulent flow of the air or water.

How sediment transport affects coastal areas

1. It results in the formation of characteristic coastal landforms such as [beaches](https://en.wikipedia.org/wiki/Beach), [barrier islands](https://en.wikipedia.org/wiki/Barrier_islands), and capes.
2. It takes place in near-shore environments due to the motions of waves and currents.
3. In coastal waters, sediment transport processes are strongly affected by high-frequency waves introducing oscillatory motions acting on the particles. The high-frequency (short) waves generally act as sediment stirring agents; net sediment transport is due to the mean current.