Most of the sand in the world deserts is in sand sheets and sand seas. These are vast regions of dunes resembling ocean waves frozen in an instant of time.

Rain does fall occasionally in deserts, and desert storms are often violent. A record forty four millimeters of rain once fell within three hours in the Sahara. Large storms may deliver up to one millimeter per minute. Normally dry stream channels can quickly fill after heavy rains, and flash floods make these channels dangerous. More people drown in deserts than die of thirst.

Deserts also receive water from short lived, streams fed by rain and snow from adjacent highlands. These streams fill the channel with a slurry of mud and commonly transport considerable quantities of sediment for a day or two. Most desert lakes are in basins with closed, or interior drainage, But, a few deserts are crossed by exotic rivers. This means rivers that get their water from outside the desert. These rivers evaporate large amounts of water on their journeys through the deserts. But they are so big that they maintain their continuity.

Lakes form where rainfall is sufficient. Desert lakes are generally shallow, temporary, and salty. Because these lakes are shallow, wind stress may cause the lake waters to move over long distances. When small lakes dry up, they leave a salt crust or hardpan.

The Great Salt Lake in Utah, and two smaller lakes are remnants of a desert lake that once covered Utah and Idaho. These areas contain useful clues to climatic change.