The desert

The desert biome covers about one-fifth of Earth's surface. This biome has a layer of soil that can either be sandy, gravelly, or stony, depending on the type of desert. Deserts usually get at most 50 centimeters (20 inches) of rainfall a year, and the organisms that live in deserts are adapted to this extremely dry climate.

Types of desert

The four main types of desert include hot and dry deserts, semi-arid deserts, coastal deserts, and cold deserts.

Hot and dry desert

In hot and dry deserts, also known as arid deserts, the temperatures are warm and dry year-round. Some famous arid deserts include the Sahara Desert that covers much of the African continent.

Semi-Arid desert

Semi-arid deserts are a bit cooler than hot and dry deserts. The long, dry summers in semi-arid deserts are followed by winters with some rain. Semi-arid deserts are found in North America, Greenland, Europe, and Asia.

Coastal desert

Coastal deserts are a bit more humid than other types of deserts. Although heavy fogs blow in from the coast, rainfall is still rare. The Atacama Desert of Chile in South America is an example of a coastal desert.

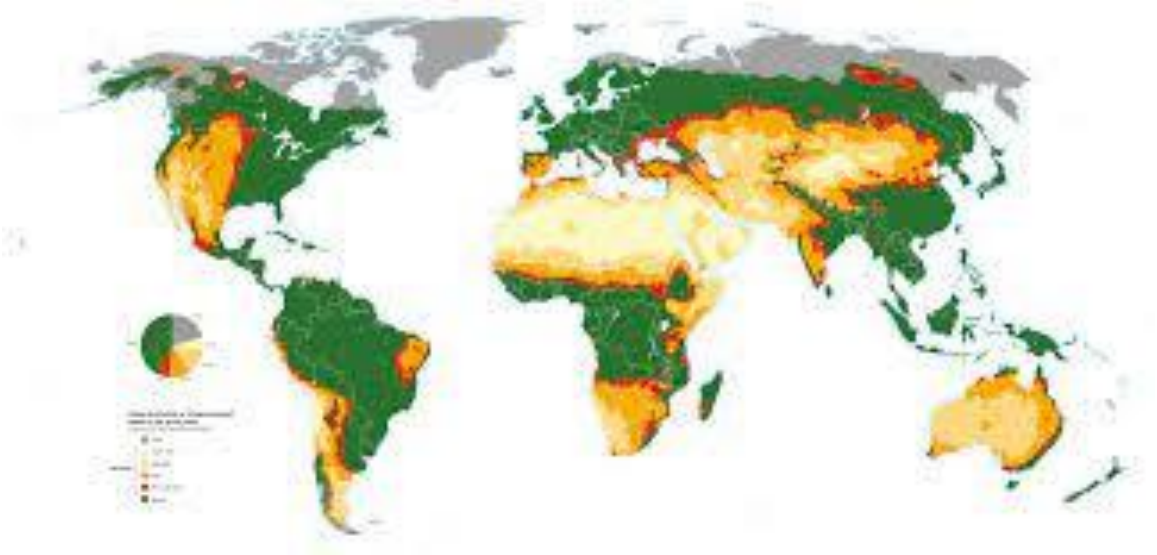
Cold deserts

Cold deserts are still dry but have extremely low temperatures in comparison to the other types of deserts. The Antarctic is an example of a cold desert.

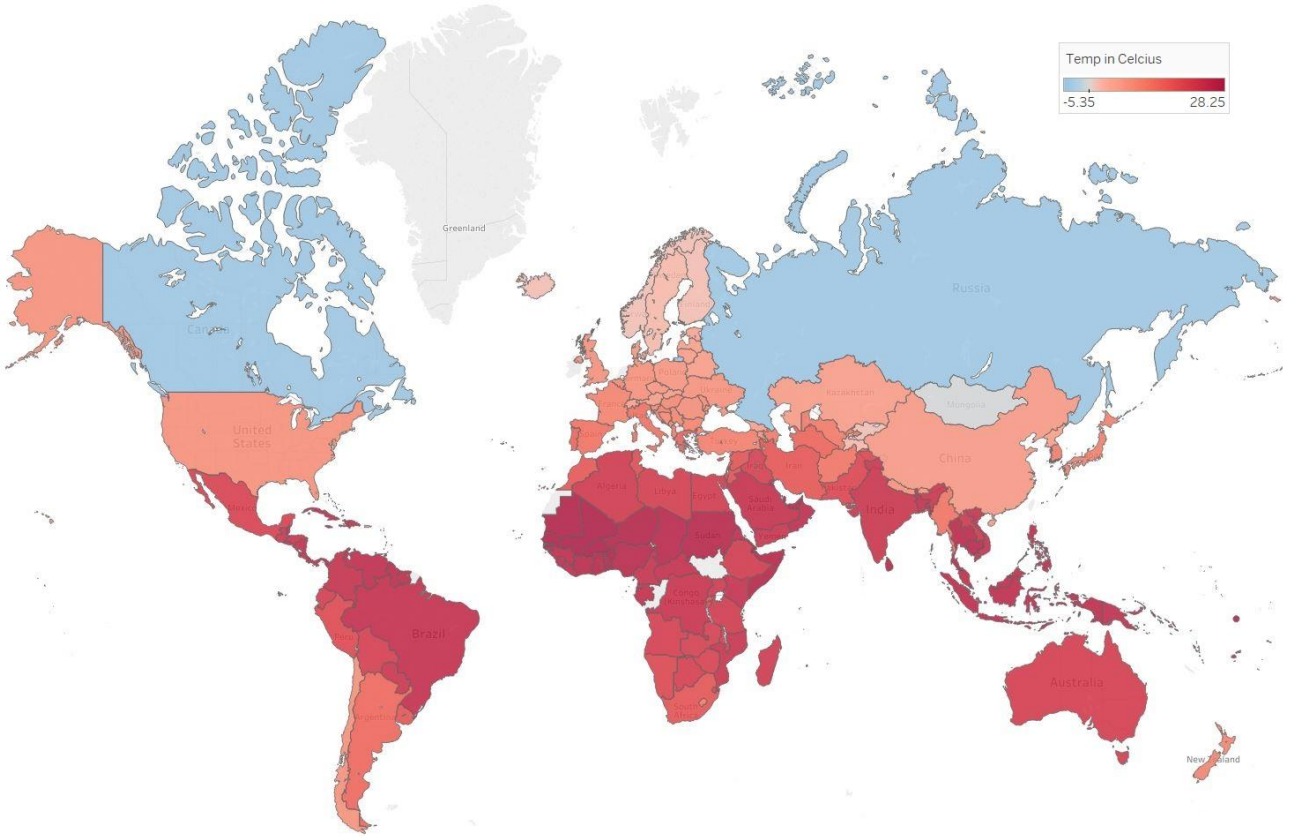
Characteristics, biotic and abiotic factors

1.Aridity and drought, Absence of water vapour in air

: a deficiency of moisture



Extreme temperatures



Humidity

low during daytime, comparatively high at night

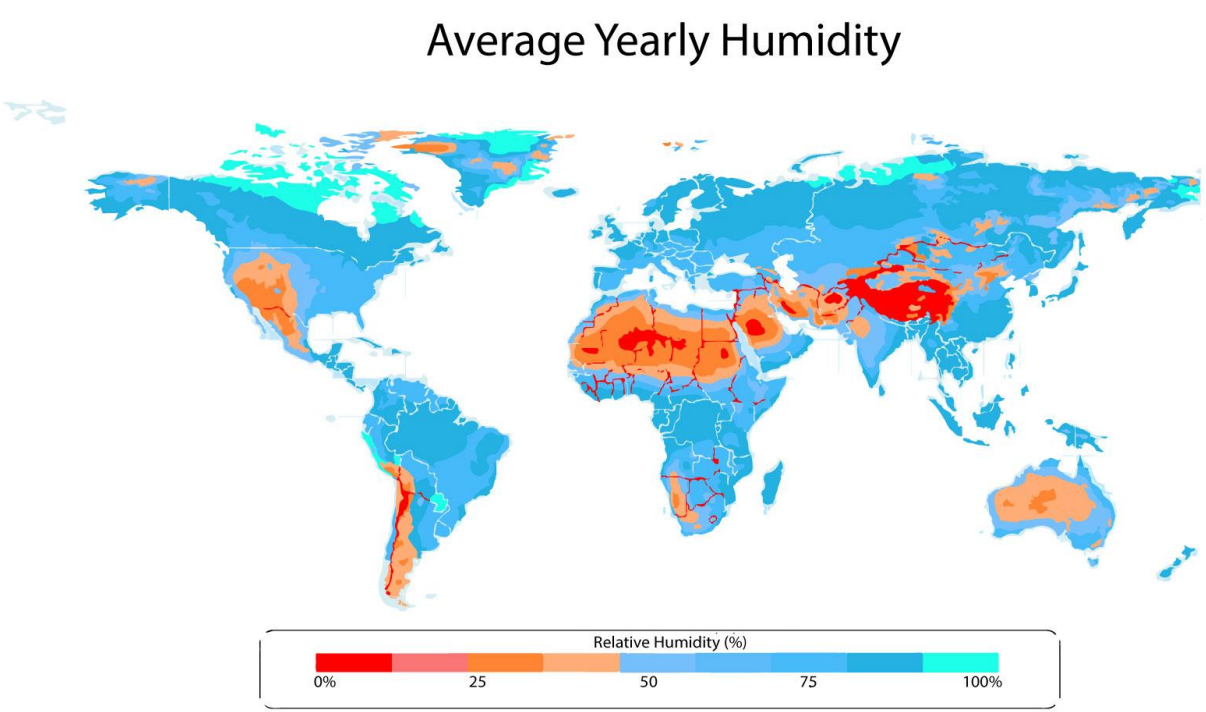
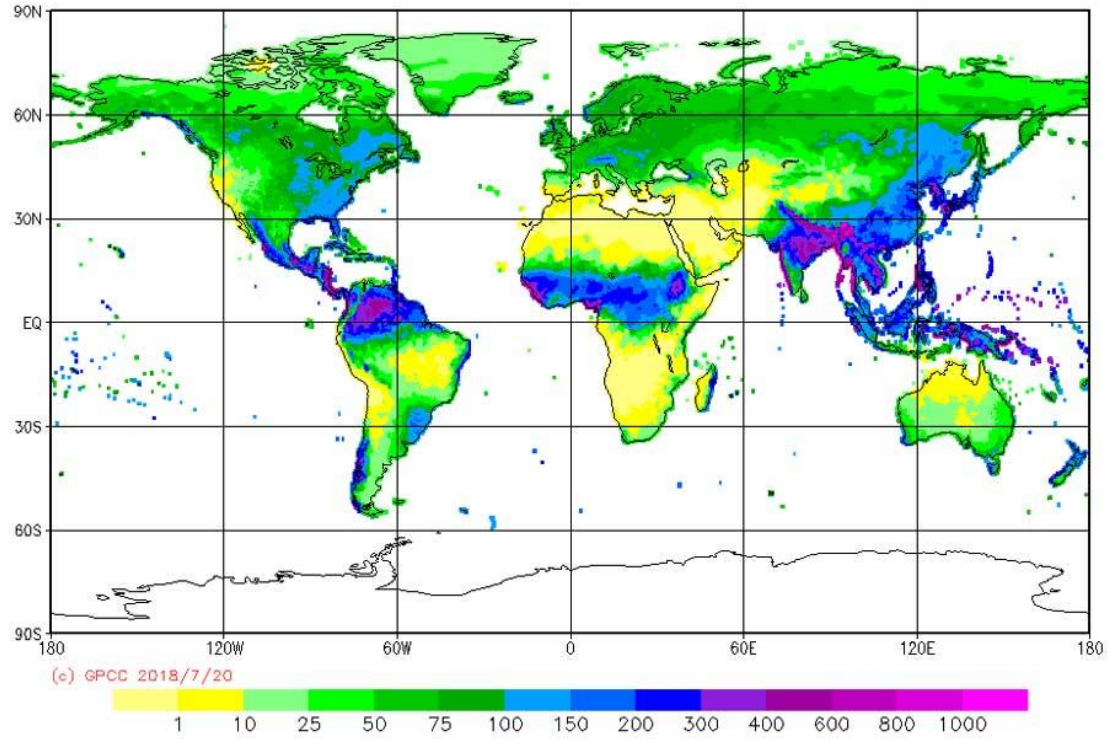


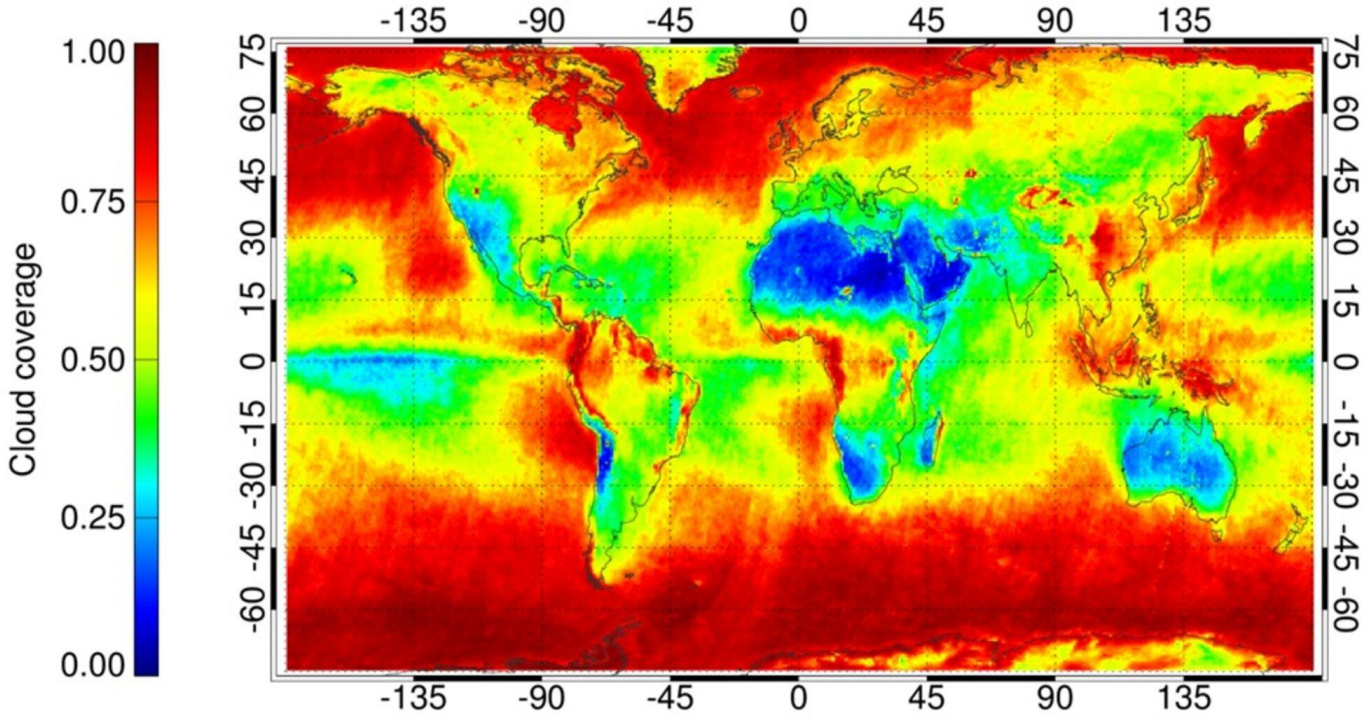
Photo Source: Univercity of wisconsin-madison

Precipitation

main feature, arid-zone, uncertainty about time and amount of rain



High wind velocity and Sparsity of cloud coverage



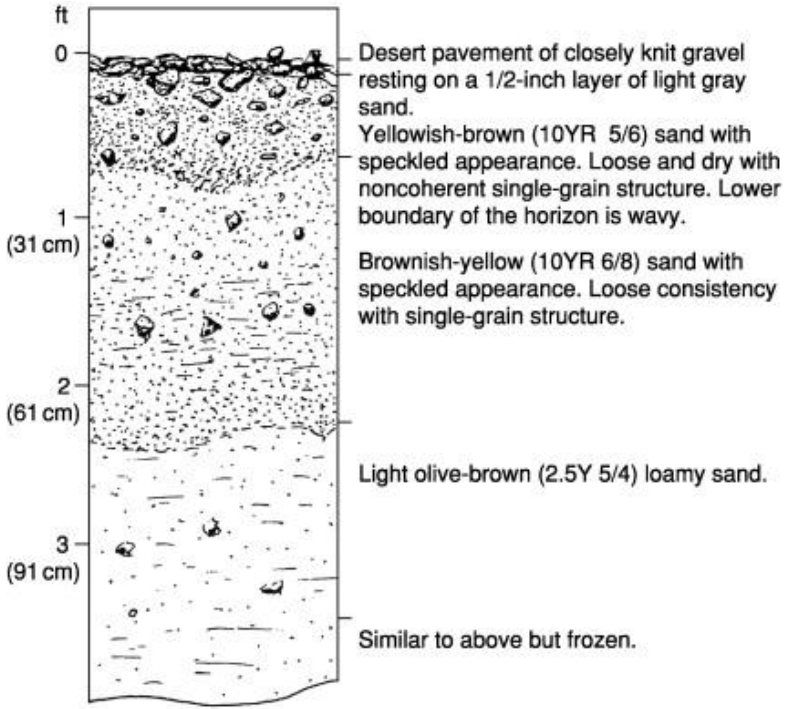
High solar radiation and many hours of sunshine and High potential of evaporation

Soils

loose, sandy soil

devoid of organic, carbon, nitrogen, moisture

soil in geological sense exists everywhere



topography

uneven topography due to shimmering mountains of rolling sand, rocks, strewn boulders

Mirage

mirage = optical illusion on a hot and windless day

Light passes through two layers of air with different temperatures. The sun heats the sand, the air above is colder.

Same can happen on a sunny day on the highway, it looks like you can find a “wet spot” but they will disappear while reaching them.

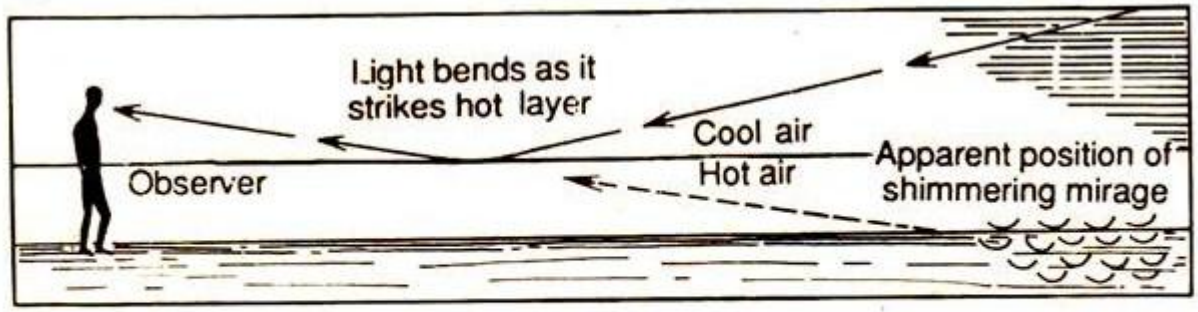


Fig. 1.3. Mirage–Mirages occur when light passes through two layers of

Plants growth and water

annual season of plant growth is extremely short

scarcity of water, in cold deserts water is not available because its frozen

Vegetation and migration

scarce vegetation and little food for animals

occasional migration of population due to catastrophes such as prolonged drought or destructive floods

Isolation

Isolation is absent in winter, intense and continuous in summer

human population density is very thin

34 persons per sq. km to 121 persons per sq. km

Desert Biotic Factors

Animals

Xerocles = animals that have adapted to live in desert

Examples: sandgrouse, camels, oryx, coyotes, snakes, lizards, desert rain frog, ...




Desert Biotic Factors

Plants

“Mesquite tree”

“Prickly Pear” cactus

desert lichens

desert grass

“Saguaro” cactus

Desert Biotic Factors

Insects -> Arthropods

Examples: beetles, ants, termites, scorpions, spiders, flies, millipedes, locusts, ...