DESERT BIOMES
**Desert Biomes:** Deserts cover about 20% and are not randomly distributed around the globe. Also, not all deserts are hot. They can exist in cold regions as well, because deserts are determined by the lack of precipitation. Deserts exist on every continent besides Europe.
B. Most of the world’s deserts exist generally in four types of regions.

1. **High Pressure areas** – Belts of high pressure around the Earth, near the latitudes of 30°N and 30°S, seem to correspond to many of the world’s hot deserts. High pressure zones also occur at the poles, which are cold deserts.
The "Jet Streams" are regions of very high wind velocities lying at the top of the Troposphere.

The position of the Jet Stream - particularly the SubPolar Jet - is very unstable. It undulates in 3-5 large waves that migrate around the globe from west to east.

The path of storms at the Earth's surface generally track along the path of the Jet Stream.
II. **Mountain Areas** – Deserts can form on the downwind, or leeward, side of the mountain range. These are sometimes called Rain Shadow deserts.
III. **Coastal Areas** – It seems contradictory to have a desert right next to an ocean, but cold coastal waters does not evaporate easily and can even remove moisture from the atmosphere. Cold air holds less moisture. When this cold, low-humidity air moves onto land that is warmer than the ocean, it can actually make the land drier than it would normally be.
IV. **Inland Areas** – the interiors of large continental land masses are usually much drier than the coasts.
C. **Common Characteristics shared by all Deserts:**

- Deserts are defined by their precipitation (less than 50 cm a year) not by climate.
- Soil tends to be well drained, with very little or absent organic matter. However, they are rich in nitrogen and other minerals.
- Limited diversity of life in both plants and animals.
D. **Major Types of Deserts:**

1. **Tropical Zone Deserts:**
   - This is where most of the Hot & Dry desert types are located. Mainly subtropical (closer to the Tropics instead of the Equator)
   - Tend to be warm throughout the year and very hot during the summer months. Winters usually bring a little more rainfall.
   - Daily temperatures are extreme due to very little cloud cover. (Soaring temperatures during the day/ low temperatures at night)
   - Plants have a lot of water conserving characteristics:
     - They tend to be small, thick and covered with a thick cuticle. In the cacti, the leaves are much-reduced (to spines) and photosynthetic activity is restricted to the stems.
   - Animals include small nocturnal carnivores. The dominant animals are burrowers. The animals stay inactive in protected hideaways during the hot day and come out to forage at dusk, dawn or at night, when the desert is cooler.
2. **Temperate Zone Deserts:**

- Typically classified as Semiarid or Coastal Deserts.
- Some share many of the same characteristics of the Tropical Zone deserts except for the winters being colder and wetter.
- Cool nights help both plants and animals by reducing moisture loss from transpiration, sweating and breathing. Furthermore, condensation of dew caused by night cooling may equal or exceed the rainfall received by some deserts.
- Naturally, many animals find protection in underground burrows where they are insulated from both heat and aridity.
3. **Polar Zone Deserts**:
   - These deserts are characterized by cold winters with snowfall and high overall rainfall throughout the winter and occasionally over the summer.
   - They occur in the Antarctic, Greenland and the Nearctic realm.
   - They have short, moist, and mildly warm summers with fairly long, cold winters. (Except for Antarctica, it is cold year round)
E. Major threats to Desert Biomes:
- In some cases global warming is predicted to increase the area of deserts.
- Human activities such as firewood gathering and the grazing of animals are also converting semiarid regions into deserts, a process known as desertification.
- Irrigation used for agriculture, may in the long term, lead to salt levels in the soil that become too high to support plants.
- Off-road vehicles, when used irresponsibly, can cause irreparable damage to desert habitats.
- Sandstorms from deserts are now increasing. This is harmful because the dust particles in the air from these storms are small enough to enter your lungs, and cause major issues for humans.