

Climatic Zones on Earth



Tropical Climates & Dry Climates

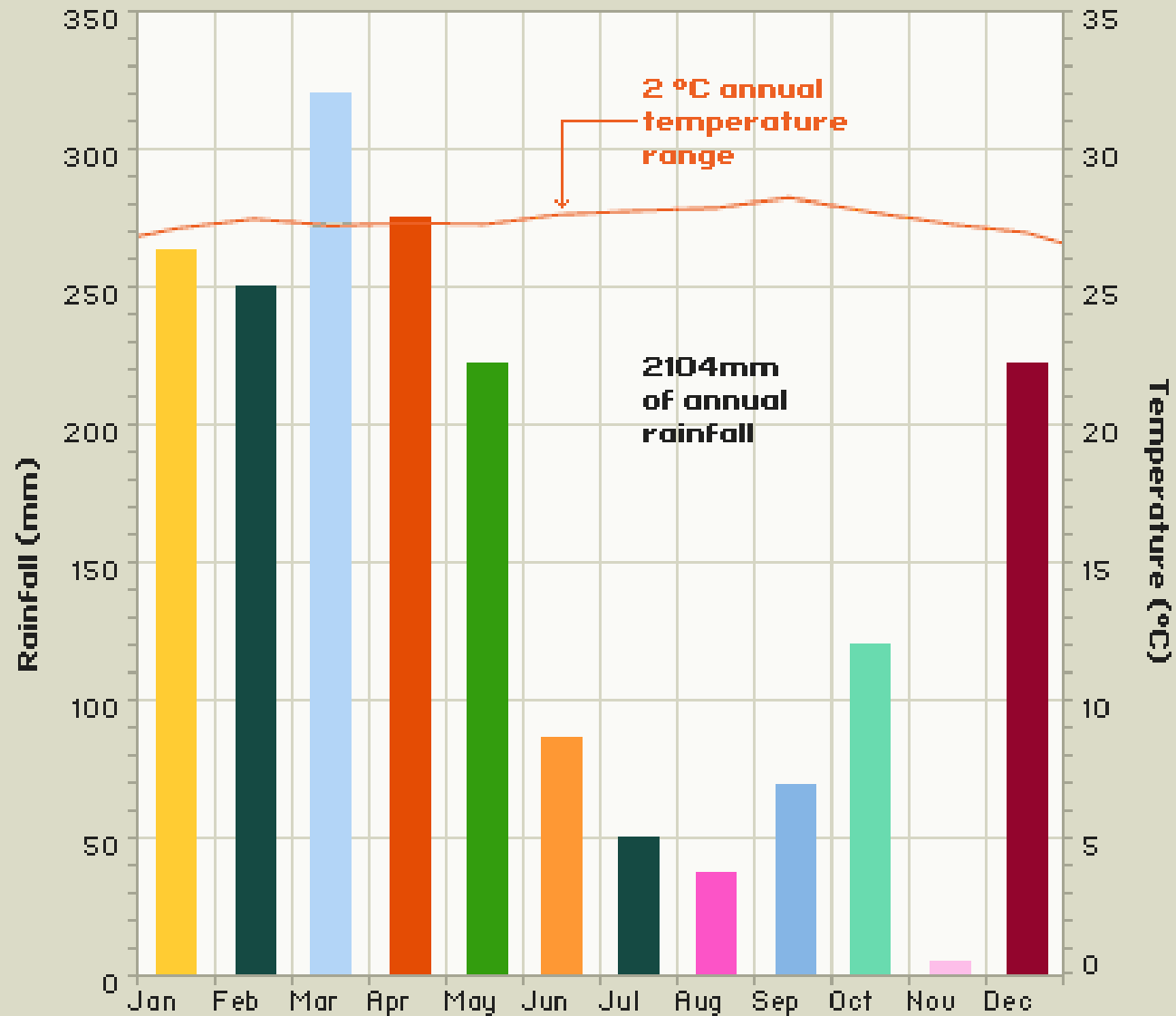
- In this lesson you will:
 - 2.7.1 Given relevant information, determine climatic conditions within selected zones. (a)
 - 2.7.2 Draw conclusions about patterns in the distribution of climatic zones. (a)

Tropical Climates

- All **tropical climates** have **average temperatures over 18°C** every day due to:
 - low latitude (near equator)
 - warm ocean currents
 - warm prevailing winds.
- You will notice on the climate graphs below that the line indicating temperature is fairly flat right around 20°C .

Manaus, Brazil

44m above sea level

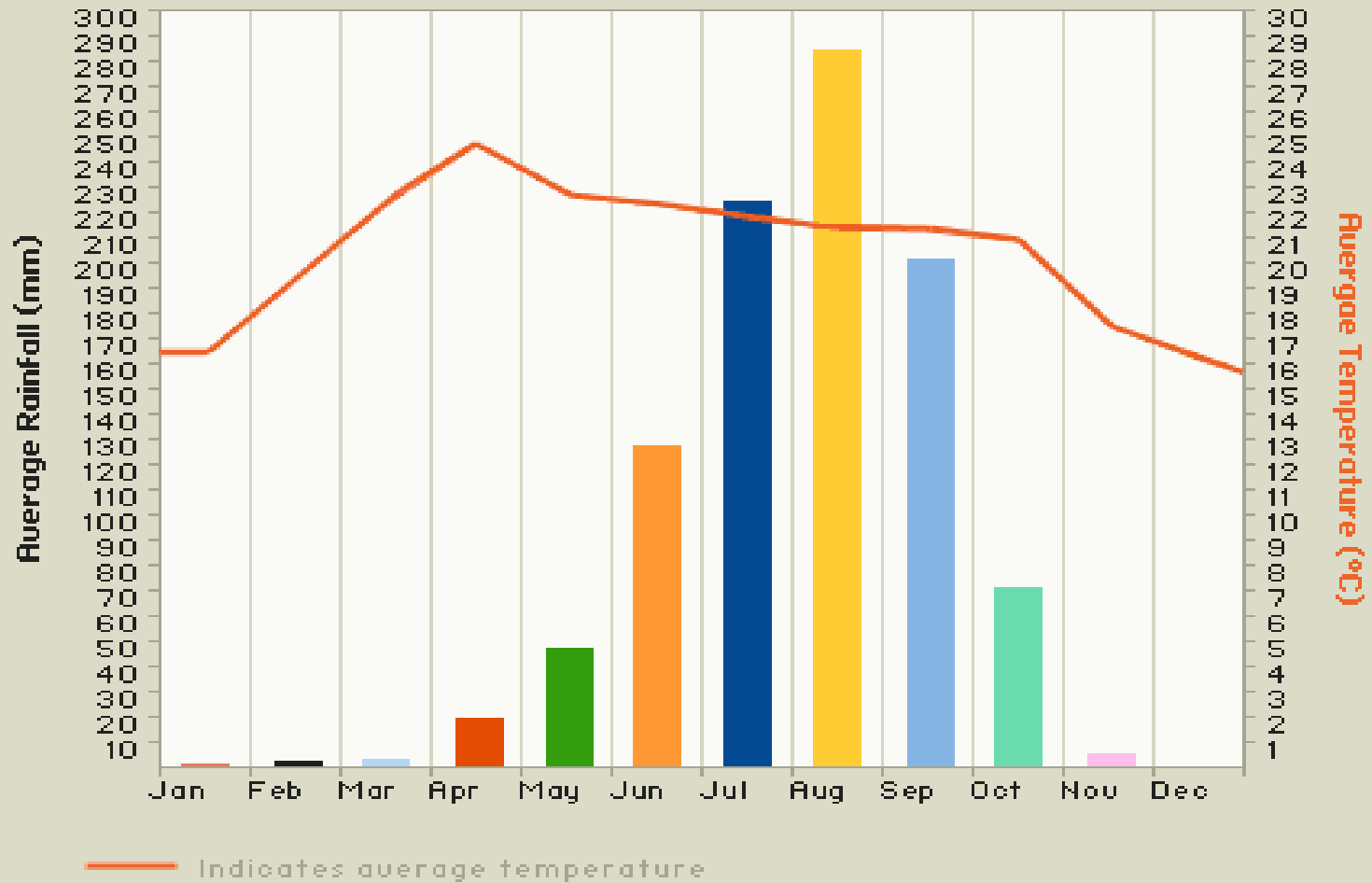


Tropical Climates & Dry Climates

- **Tropical wet and tropical wet & dry climates are located between the Tropic of Cancer and the Tropic of Capricorn.**
 - **Tropical Wet sub region: heavy rain all year due to hot temperatures & resulting convectional rain.**
 - **Tropical Wet & Dry sub region: very heavy summer rain & very dry winter due to seasonal shift in prevailing winds. (monsoon regions)**



Temperatures and precipitation (rainfall) in Timbuktu, in Mali, Africa



Arid (Dry) Climates

- All arid (dry) climates receive **less than 500mm precipitation annually**.
 - The region has **more evaporation than precipitation** leaving it in a **water deficit**.
 - There is **little vegetation** & it is **often windy**
 - It is often hard to tell the difference between an arid and semi-arid climate by looking at the climate graphs.
 - However, they are easy to compare to all other climates because of the low precipitation bars.

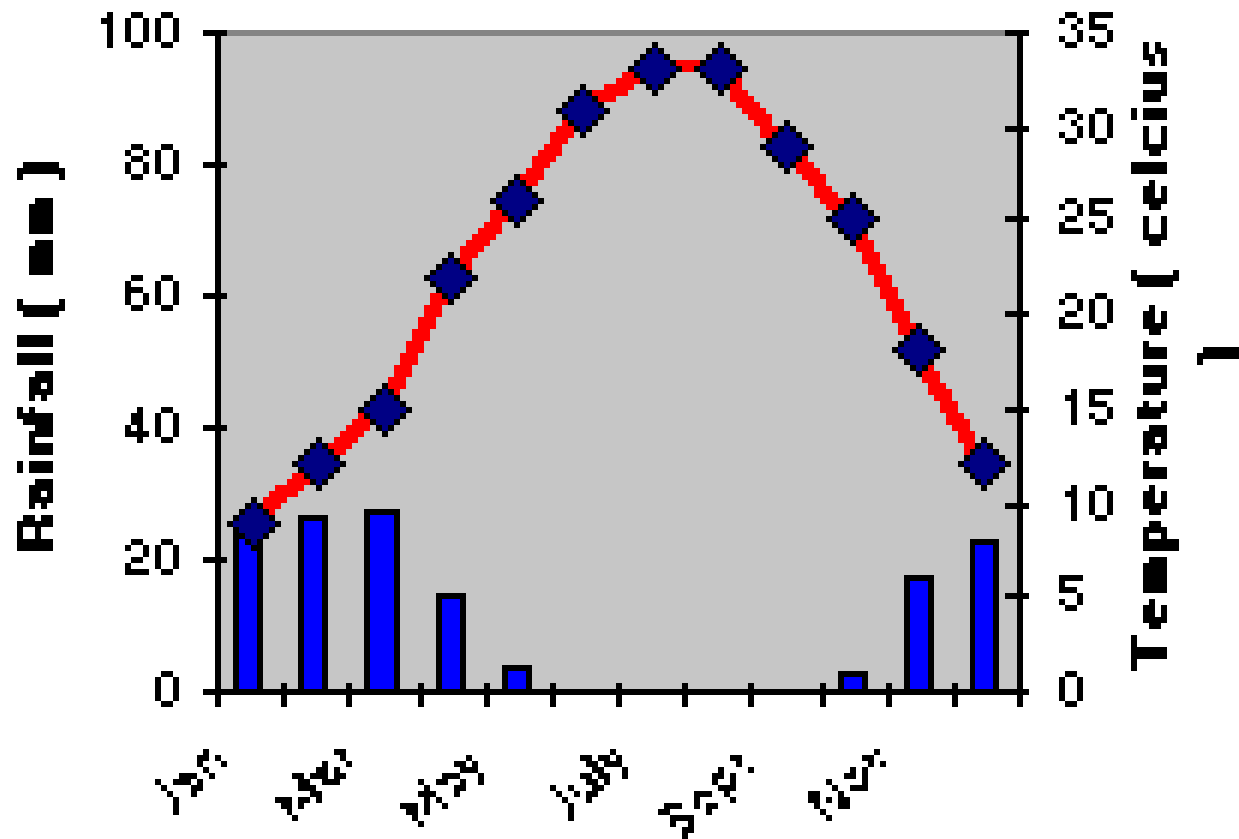


Arid (Dry) Climates

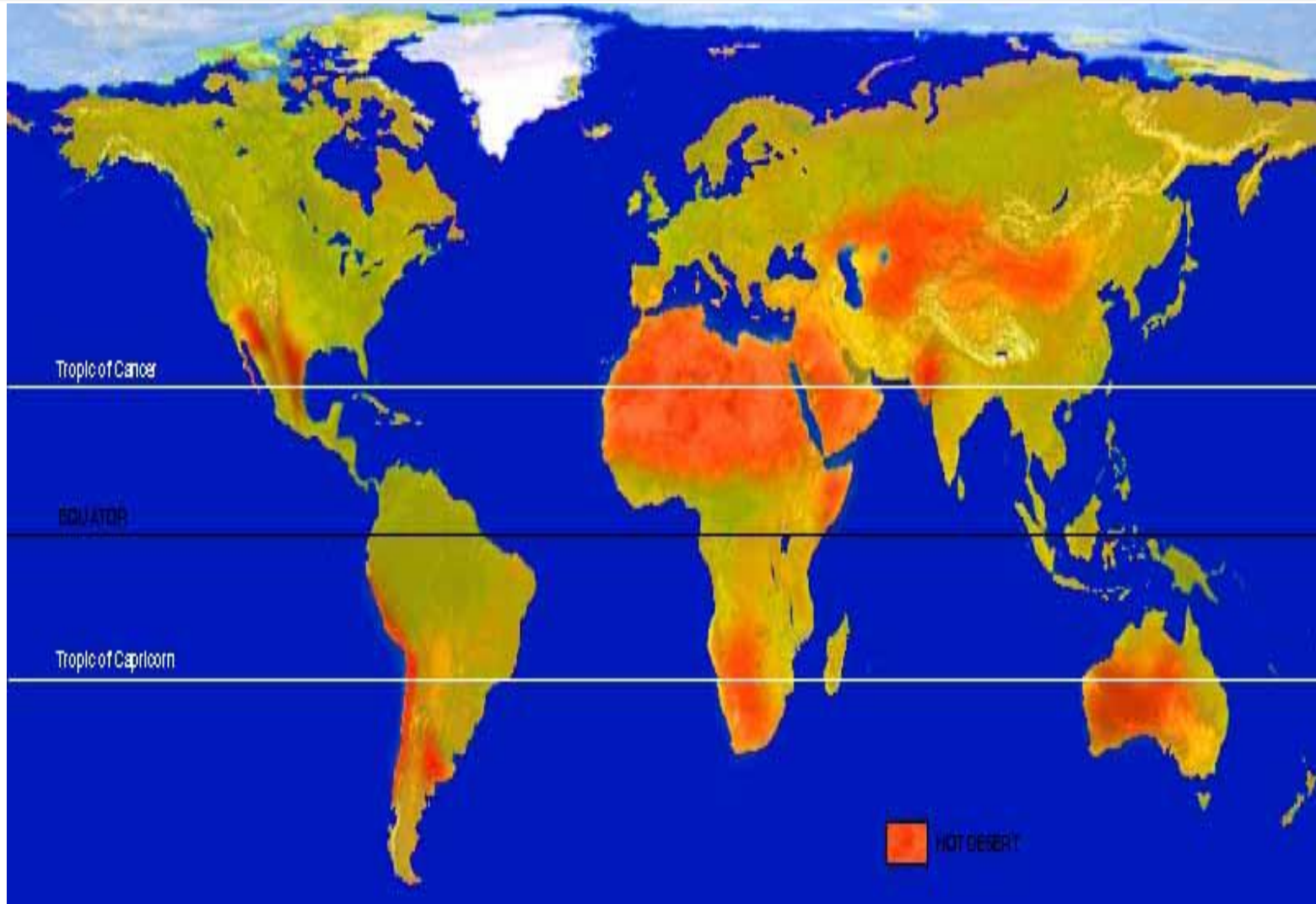
- **Arid or desert** dry climates occur mostly **between 10-30°N & 10-30°S** and receive **10-250mm** rain annually.
- **Semi-arid steppe** dry climates are really **transition zones** between desert & forest. They receive **250-500mm** rain annually which is often **enough to support grasses but not forests**.



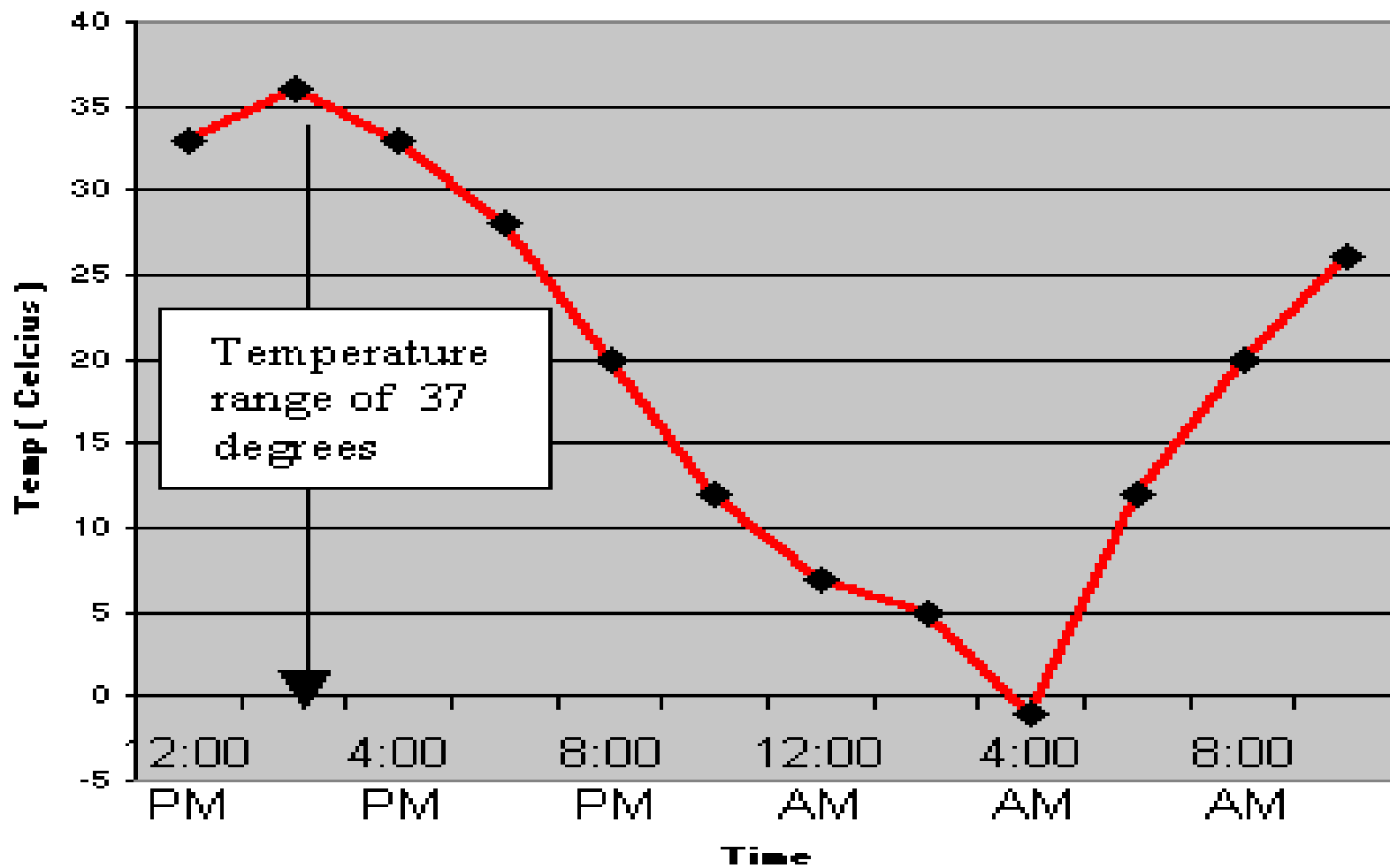
Climate Graph: Baghdad, Iraq



Red Areas- Major Hot Deserts



Diurnal Temperature Range For A Hot Desert



Clear desert skies at night allowing the heat that has built up during the day to escape quickly.





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A winter flower showing that plants have adapted to all aspects of desert climate.



The Patagonia Desert (Argentina) in winter



Semi-arid steppe



Temperate Climates & Polar Climates

- In this lesson you will learn to...
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Temperate Climates

- **Temperate mild climates** occur in both hemispheres.
- **Temperate cold climates** only occur in the Northern Hemisphere. (figure 5.1 on page 75)



Temperate Mild Winter

- Temperature varies with seasons
- Occur in the Mid Latitudes (Ex: 40-50 degrees)
- Mild winters
- Summer temperatures vary but **winters are warmer than -3°C**

Temperate Cold Winter

- Temperature varies with seasons
- Occur in the Mid-high Latitudes (40 degrees +)
- Cold winters
- Summer temperatures vary but **winters are colder than -3°C**



Polar Climates

- **Polar climates** are distinguished by their **extremely low winter temperatures and low summer temperatures.**
- **Tundra:** summer temperature **never above 10°C**
- **Ice Caps:** summer's average monthly temperature is **never above 0°C**



Highland Climates

- These climates are **only characterized by their elevation** and decreased temperature because of that.
- However the **climates vary with latitude of the mountain, closeness to the ocean** etc.
- Some alpine regions can be like the tundra and the ice cap of a mountain is like the polar ice caps.

