

# Climatic Zones on Earth



# Tropical Climates & Dry Climates

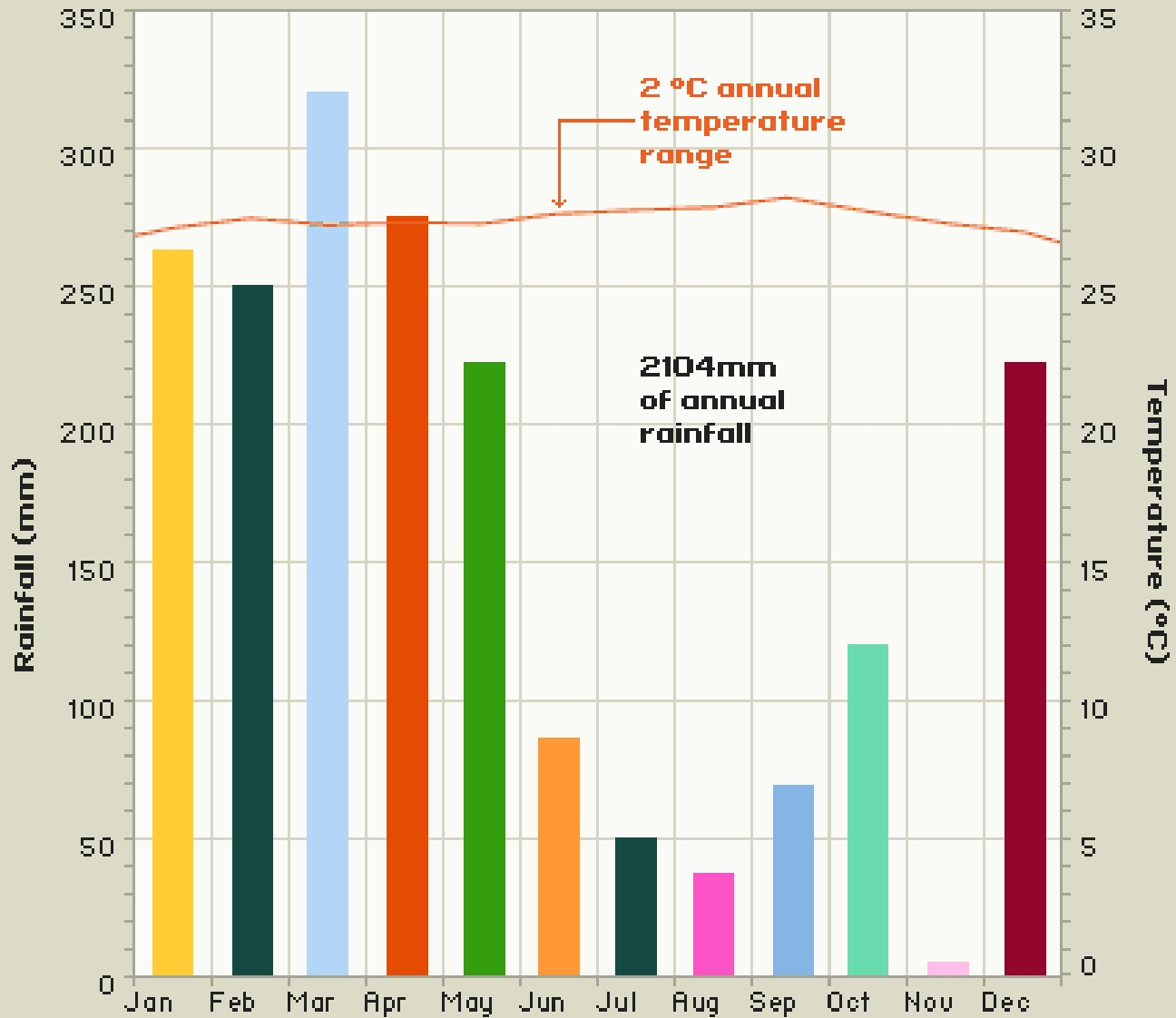
- In this lesson you will:
  - 2.7.1 Given relevant information, determine climatic conditions within selected zones. (a)
  - 2.7.2 Draw conclusions about patterns in the distribution of climatic zones. (a)

# Tropical Climates

- All **tropical climates** have **average temperatures over  $18^{\circ}\text{C}$**  every day due to:
  - low latitude (near equator)
  - warm ocean currents
  - warm prevailing winds.
- **DO NOT WRITE:** You will notice on the climate graphs below that the line indicating temperature is fairly flat right around  $20^{\circ}\text{C}$ .

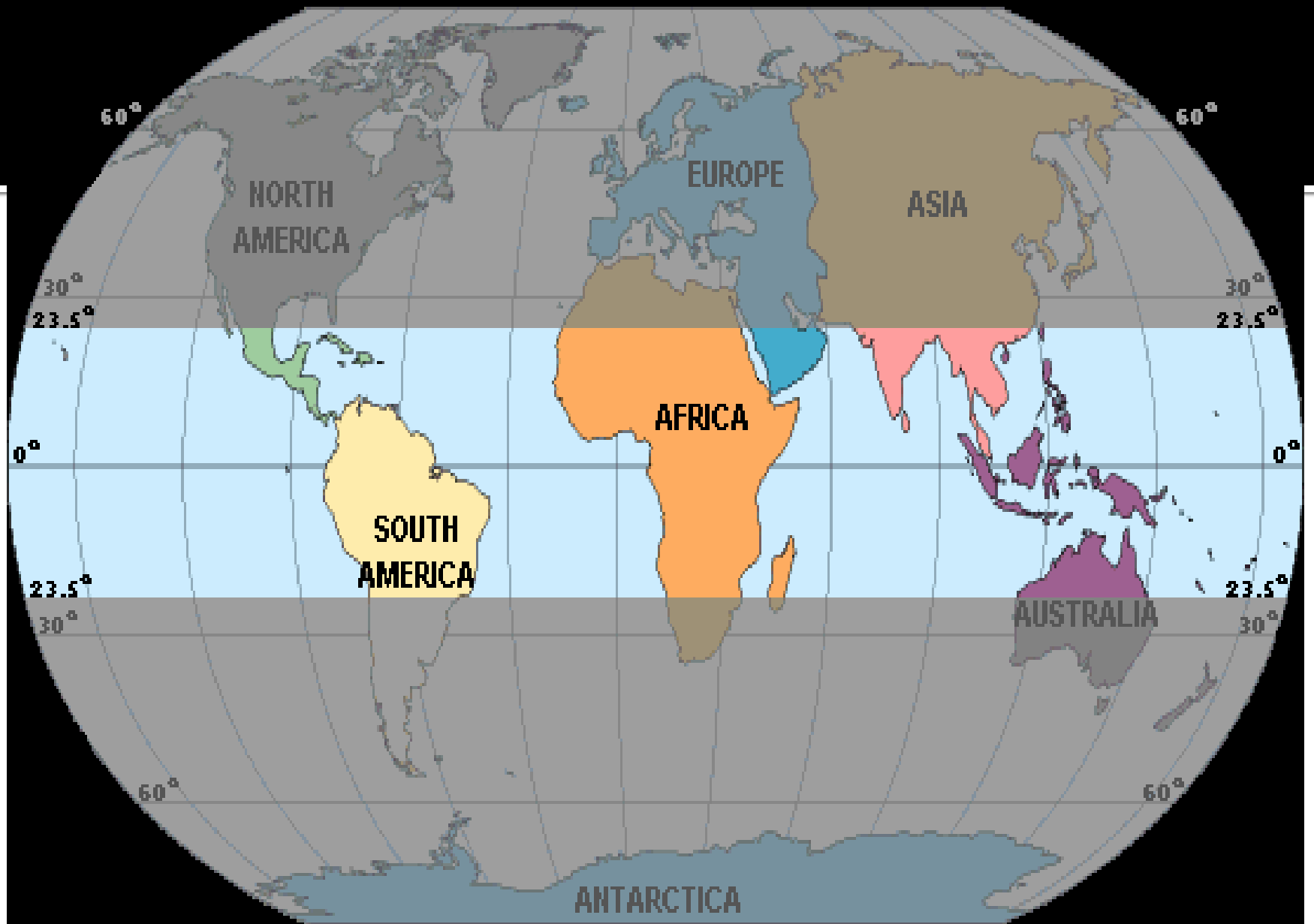
## Manaus, Brazil

44m above sea level

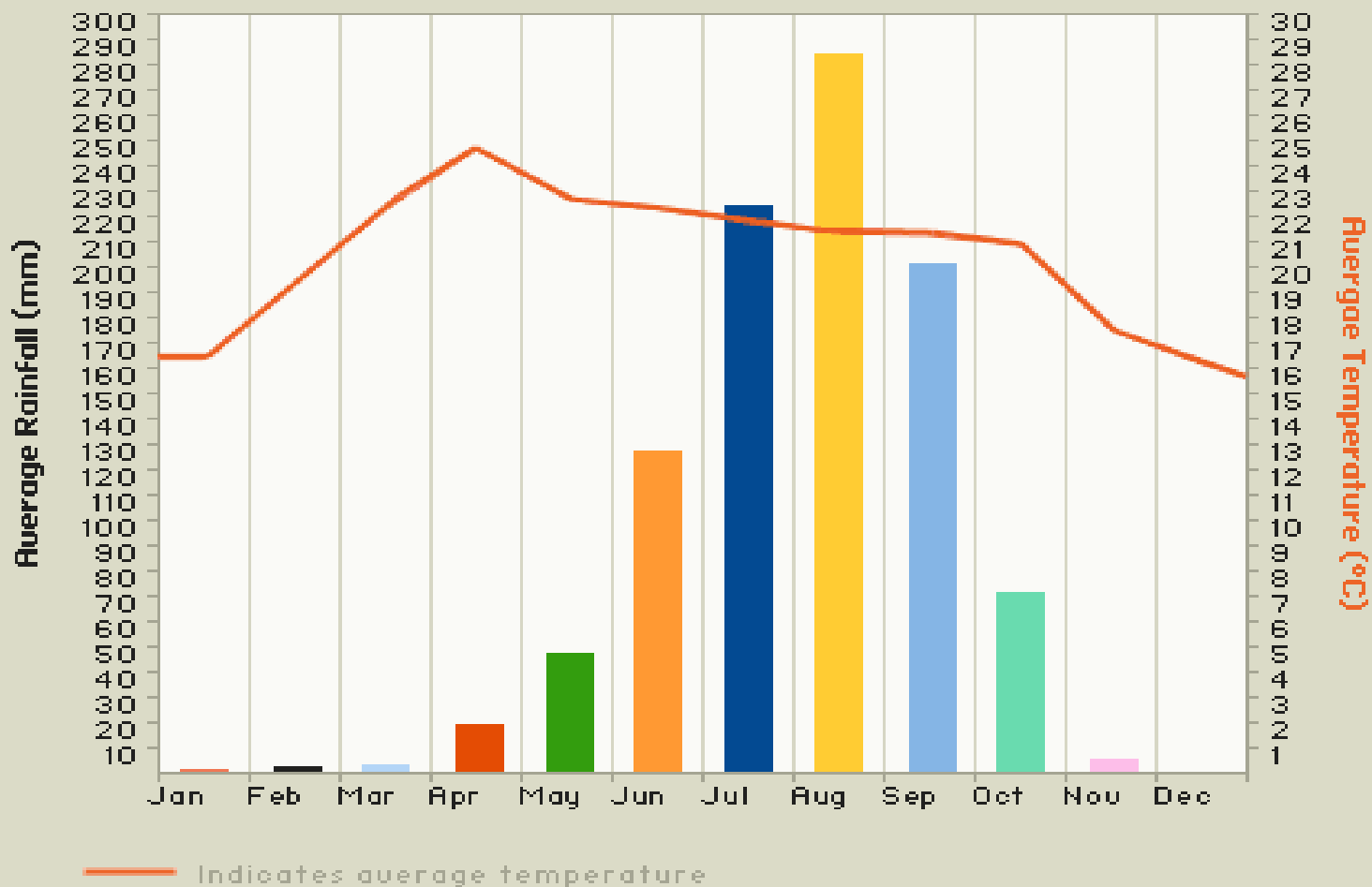


# Tropical Climates & Dry Climates

- Tropical climates are located **between the Tropics of Cancer and Capricorn**. There are 2 types:
  - 1) **Tropical Wet: heavy rain all year** due to hot temperatures and **convictional rain**.
  - 2) **Tropical Wet & Dry: very heavy summer rain & very dry winter.** (monsoon regions)



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



# Arid (Dry) Climates

- All arid (dry) climates get less than 500mm precipitation every year.
  - The region has more evaporation than precipitation.
  - There is not much plant life & it is often windy
  - On a climate graph, you can see that a climate is arid because of the low precipitation bars.



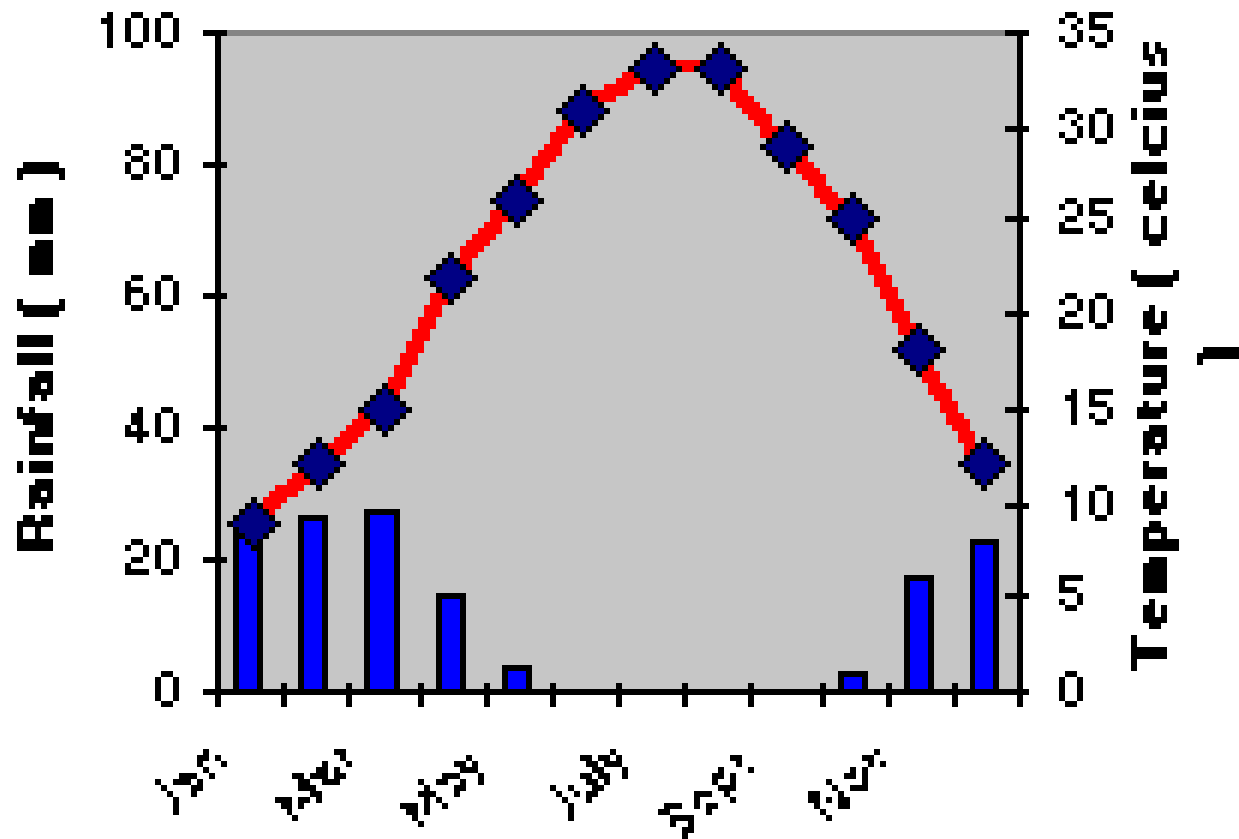


# Arid (Dry) Climates

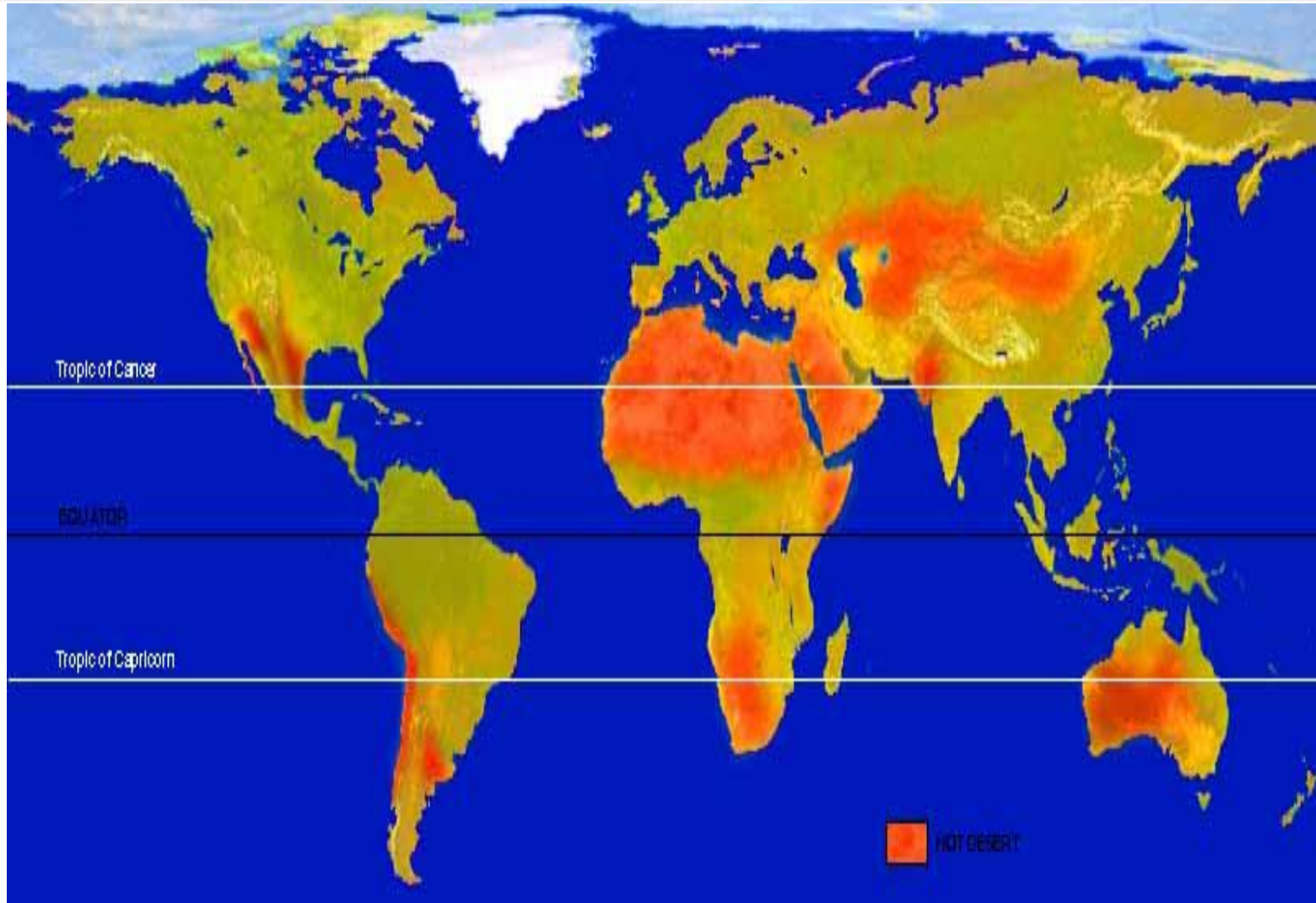
- There are 2 types of arid climates:
  - 1) **Arid (or desert)** dry climates are found mostly **between 10-30°N & 10-30°S** latitude and get **10-250mm rain** every year.
  - 2) **Semi-arid** dry climates are a boundary between deserts & forests. They get **250-500mm rain** every year...enough for grasses to grow but not trees.



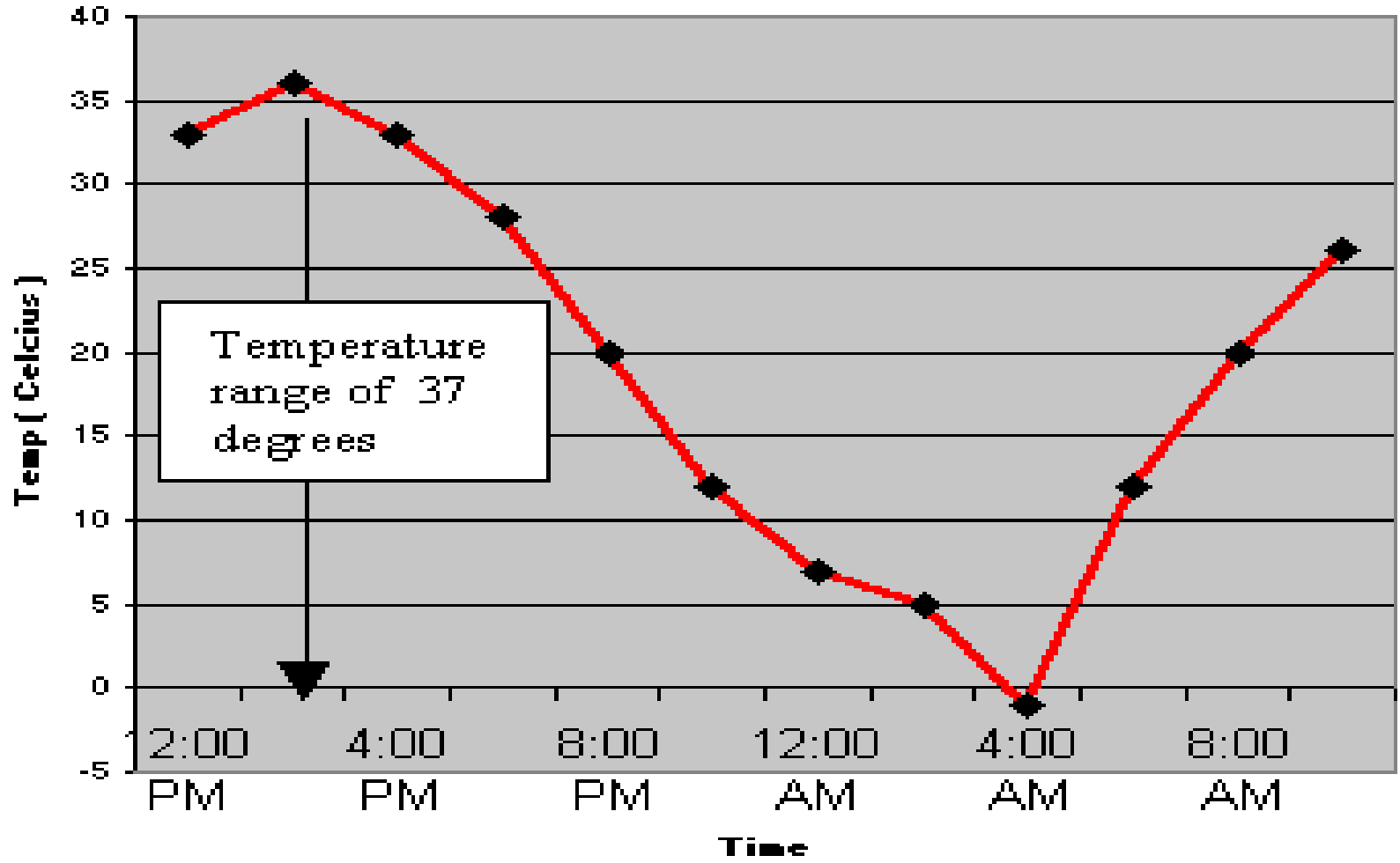
# Climate Graph: Baghdad, Iraq



# 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.**





© Marc Pélissier



**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 )
- Why?



# Temperate Mild Winter

- Temperature changes with the seasons
- Occur in the Mid Latitudes (Ex: 40-50 degrees N or S)
- Mild winters
- Summer temperatures vary but **winters are warmer than  $-3^{\circ}\text{C}$**

# Temperate Cold Winter

- Temperature changes with seasons
- Occur in the Mid-high Latitudes (40 degrees +)
- Cold winters
- Summer temperatures vary but **winters are colder than  $-3^{\circ}\text{C}$**





# Polar Climates

- **Polar climates** are known for their **very cold winter temperatures and low summer temperatures.**
- **Tundra:** summer average temperature **never above 10°C**
- **Ice Caps:** summer average monthly temperature is **never above 0°C**



# Highland Climates

- These climates happen in places with high elevation and are colder than the temperatures at sea level.
- However, how cold it gets depends on where the highland is located:
  - How far from the equator
  - How close to the ocean
  - How near it is to an ocean current

