

21.2 World Climates

The Köppen Climate Classification System

- ◆ The **Köppen climate classification system** uses mean monthly and annual values of temperature and precipitation to classify climates.

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Humid Tropical Climates

- ◆ Humid tropical climates are without winters. Every month in such a climate has a mean temperature above 18°C. The amount of precipitation can exceed 200 cm per year.
- ◆ Wet Tropical
 - **Wet tropical climates** have high temperatures and much annual precipitation.

Rain Forest in Malaysia



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Humid Tropical Climates

- ◆ Tropical Wet and Dry
 - **Tropical wet and dry climates** are climates that transition between the wet tropics and the subtropical steppes.

African Savanna



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Humid Mid-Latitude Climates

- ◆ Climates with mild winters have an average temperature in the coldest month that is below 18°C but above -3°C . Climates with severe winters have an average temperature in the coldest month that is below -3°C .

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Humid Mid-Latitude Climates

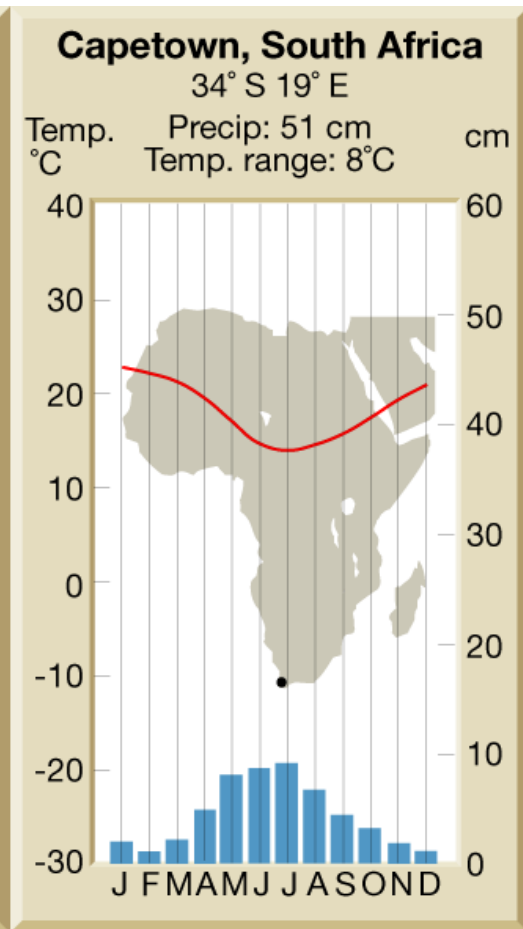
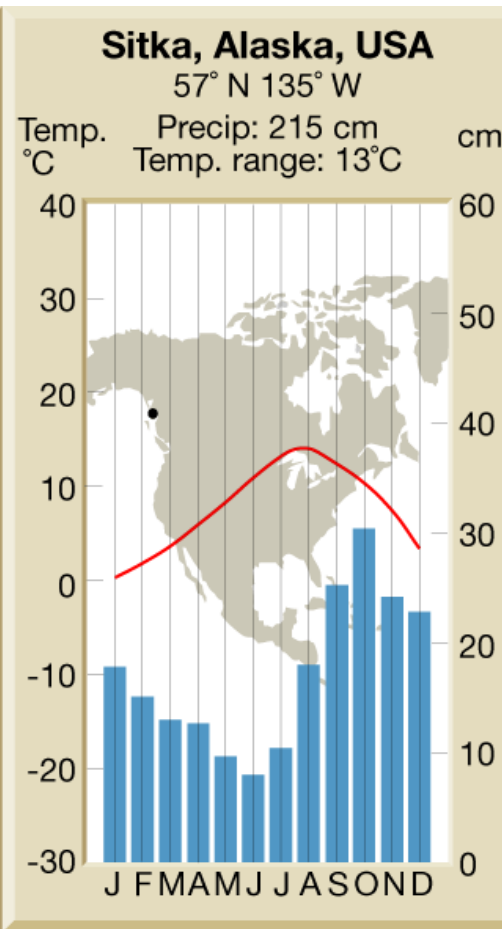
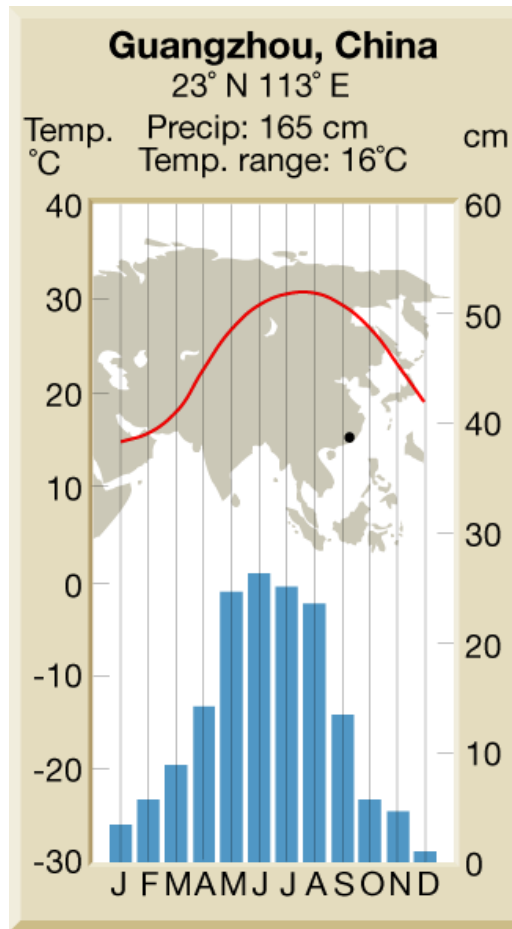
- ◆ Humid Mid-Latitude with Mild Winters
 - A **humid subtropical climate** is generally located on the eastern side of a continent and is characterized by hot, sultry summers and cool winters.
 - A **marine west coast climate** is found on windward coasts from latitudes 40° to 65° and is dominated by maritime air masses. Winters are mild, and summers are cool.

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Humid Mid-Latitude Climates

- ◆ Humid Mid-Latitude With Mild Winters
 - A **dry-summer subtropical climate** is a climate located on the west sides of continents between 30° and 45° latitude. It is the only humid climate with a strong winter precipitation maximum.

Mid-Latitude Climates

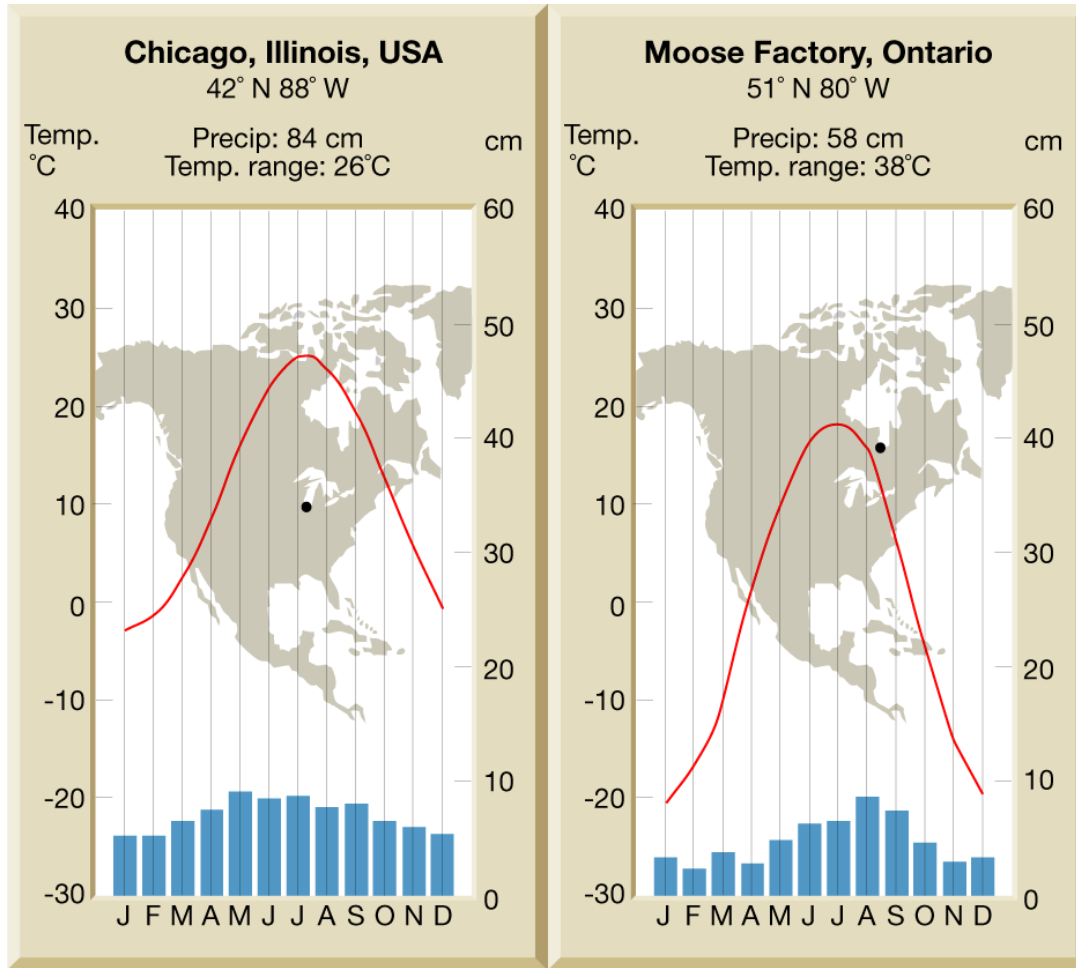


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Humid Mid-Latitude Climates

- ◆ Humid Mid-Latitude With Severe Winters
 - A **subarctic climate** is found north of the humid continental climate and south of the polar climate; it is characterized by bitterly cold winters and short, cool summers. Places within this climate realm experience the highest annual temperature ranges on Earth.

Mid-Latitude Climates



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Dry Climates

- ◆ A dry climate is one in which the yearly precipitation is not as great as the potential loss of water by evaporation.

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Polar Climates

- ◆ Polar climates are those in which the mean temperature of the warmest month is below 10°C.

An Ice Cap Climate Is a Polar Climate



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Highland Climates

- ◆ In general, highland climates are cooler and wetter than nearby areas at lower elevations.