

# Chapter 4: Ecosystems and Communities

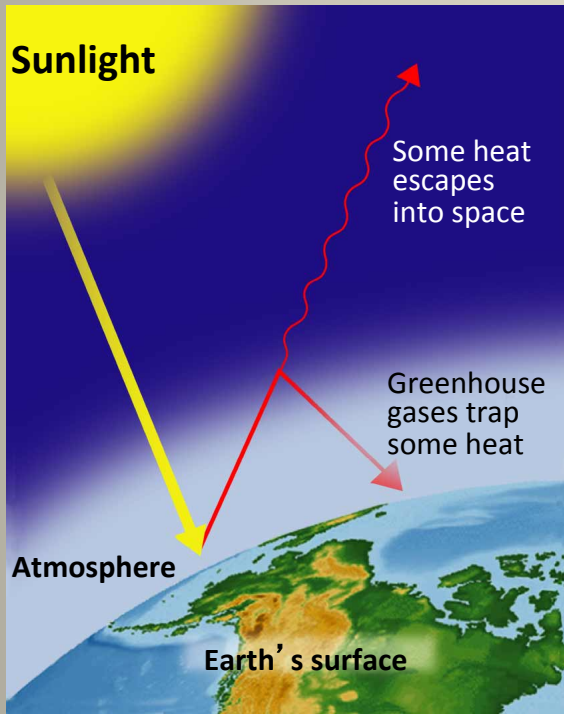
## Essential Questions:

- How does the ***greenhouse effect*** maintain the biosphere's temp. range?
- What are Earth's 3 main climate zones?
- How do ***biotic*** and ***abiotic*** factors influence an ecosystem?
- What interactions occur within communities?
- What is ***ecological succession***?
- What are characteristics of the major land biomes?

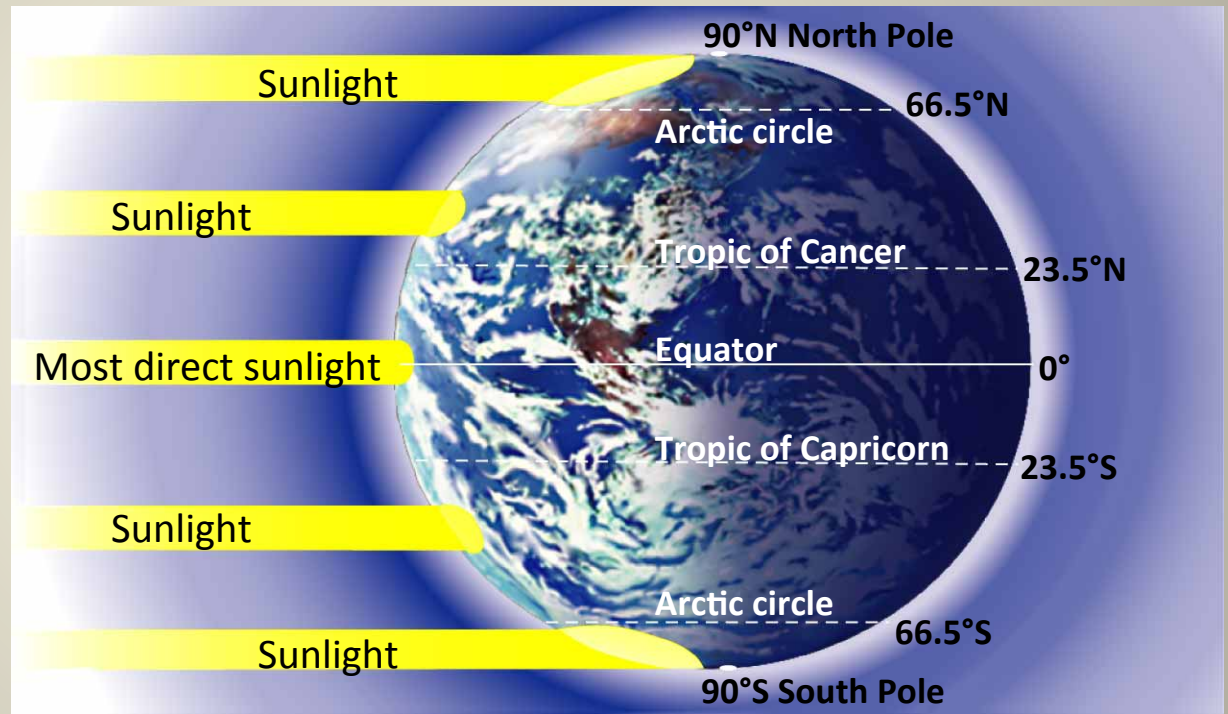
## 4-1 The Role of Climate

- What Is Climate?
  - Weather vs. Climate
  - The Greenhouse Effect
- Effect of Latitude on Climate
  - Angle of sun vs. latitude
    - 3 main climate zones
      - Polar – between  $66.5^{\circ}$  &  $90^{\circ}$  north & south
      - Temperate – between  $23.5^{\circ}$  &  $66.5^{\circ}$  north & south
      - Tropical – between  $23.5^{\circ}$  north and  $23.5^{\circ}$  south
- Heat Transport in the Biosphere
  - Unequal heating & wind/ocean currents
    - Land masses can interfere

## Greenhouse Effect



## Different Latitudes

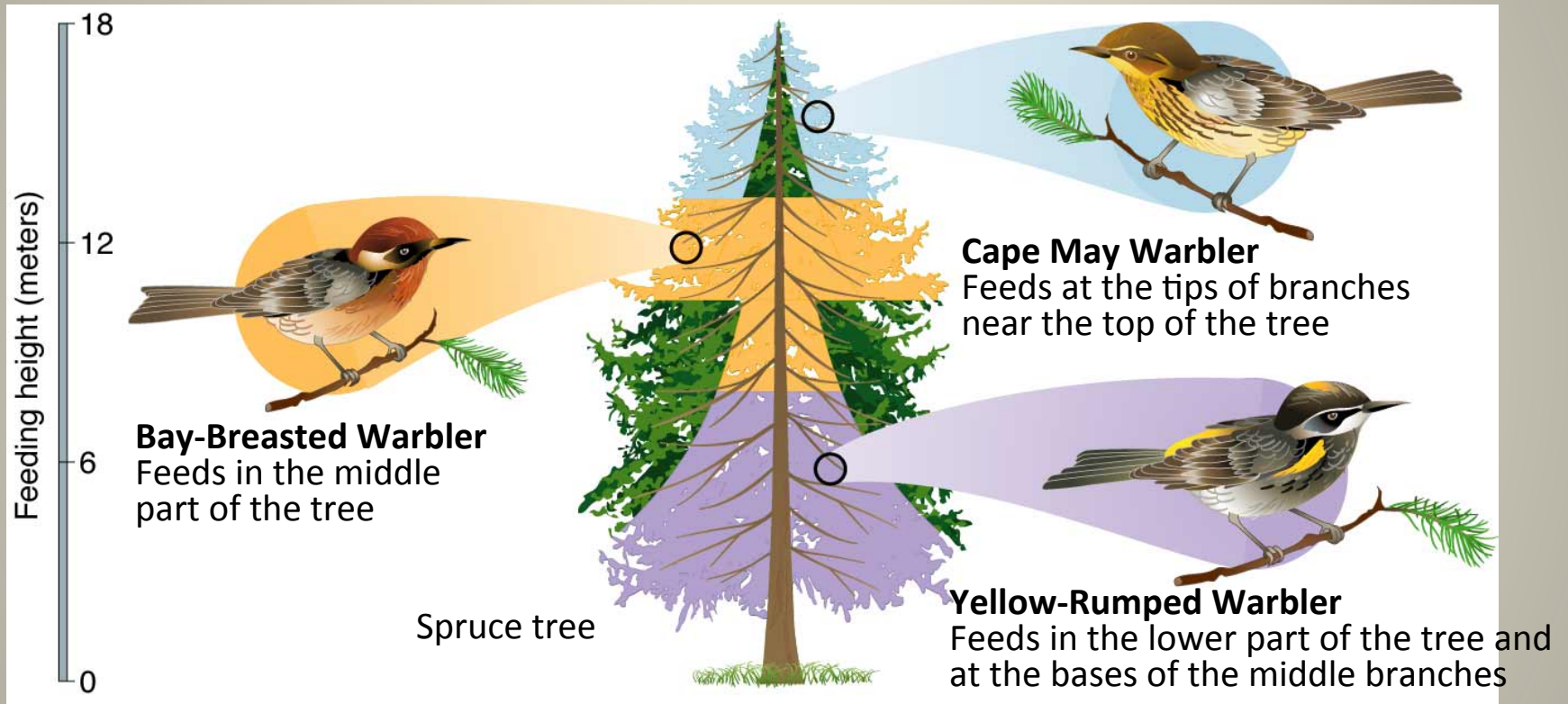


## 4–2 What Shapes an Ecosystem?

- Biotic & Abiotic Factors
- The Niche
  - Habitat = address, niche = occupation
- Community Interactions
  - Competition
    - Competition exclusion principle
    - Predation
    - Symbiosis
      - Mutualism
      - Commensalism
      - Parasitism



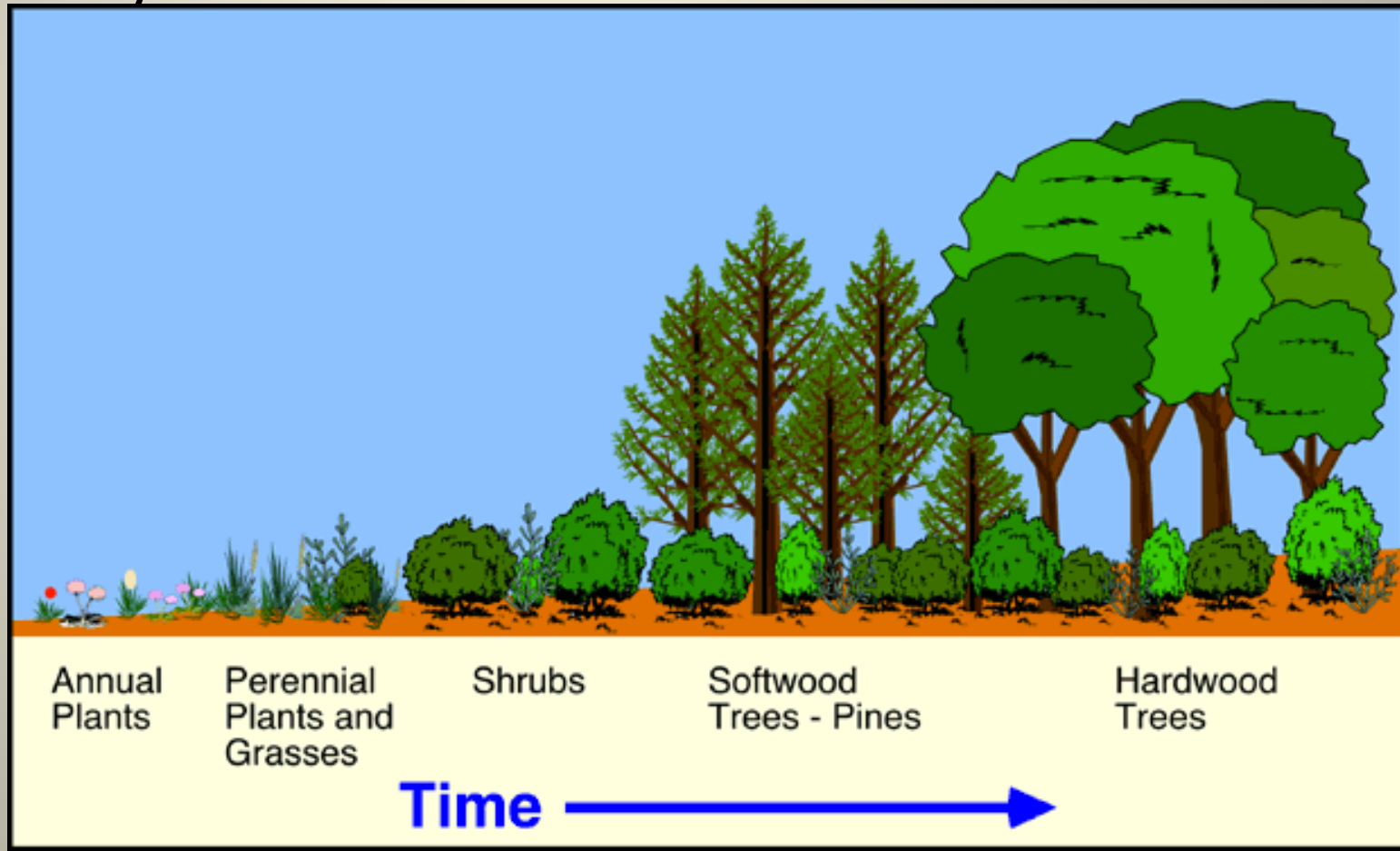
# Figure 4-5 Three Species of Warblers and Their Niches



- Ecological Succession

- Primary

- Secondary



# 4-3 Land Biomes

- Biome
  - Climate and Microclimate
    - Climate diagram
    - Microclimate
  - The Major Biomes – see map
  - Other Land Areas
    - Mountain Ranges – elevation
    - Polar Ice Caps



# Figure 4-17 The World's Major Land Biomes

