KEY CONCEPT

Populations grow in predictable patterns.
Changes in a population’s size are determined by immigration, births, emigration, and deaths.

- The size of a population is always changing.
- Four factors affect the size of a population.
  - immigration
  - births
  - emigration
  - deaths
Population growth is based on available resources.

- Exponential growth is a rapid population increase due to an abundance of resources.
14.4 Population and Growth Patterns

• Logistic growth is due to a population facing limited resources.

![Graph showing logistic growth](image)
14.4 Population and Growth Patterns

- Carrying capacity is the maximum number of individuals in a population that the environment can support.
- A population crash is a dramatic decline in the size of a population over a short period of time.
14.4 Population and Growth Patterns

Ecological factors limit population growth.

- A limiting factor is something that keeps the size of a population down.
- Density-dependent limiting factors are affected by the number of individuals in a given area.
14.4 Population and Growth Patterns

- Density-dependent limiting factors are affected by the number of individuals in a given area.
  - predation
  - competition
  - parasitism and disease
14.4 Population and Growth Patterns

• Density-independent limiting factors limit a population’s growth regardless of the density.
  – unusual weather
  – natural disasters
  – human activities