

14.4 Population and Growth Patterns

KEY CONCEPT

Populations grow in predictable patterns.



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▶ **Changes in a population's size are determined by immigration, births, emigration, and deaths.**

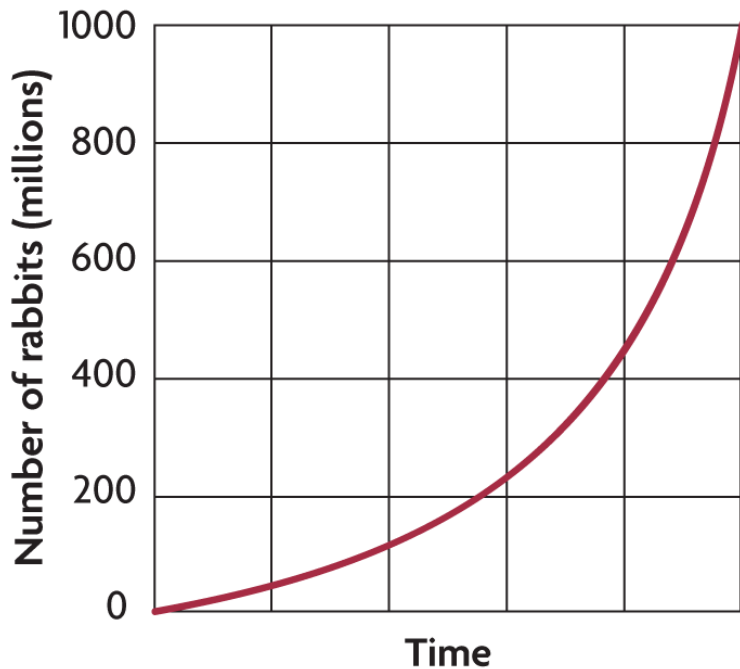
- The size of a population is always changing.
- Four factors affect the size of a population.
 - immigration
 - births
 - emigration
 - deaths



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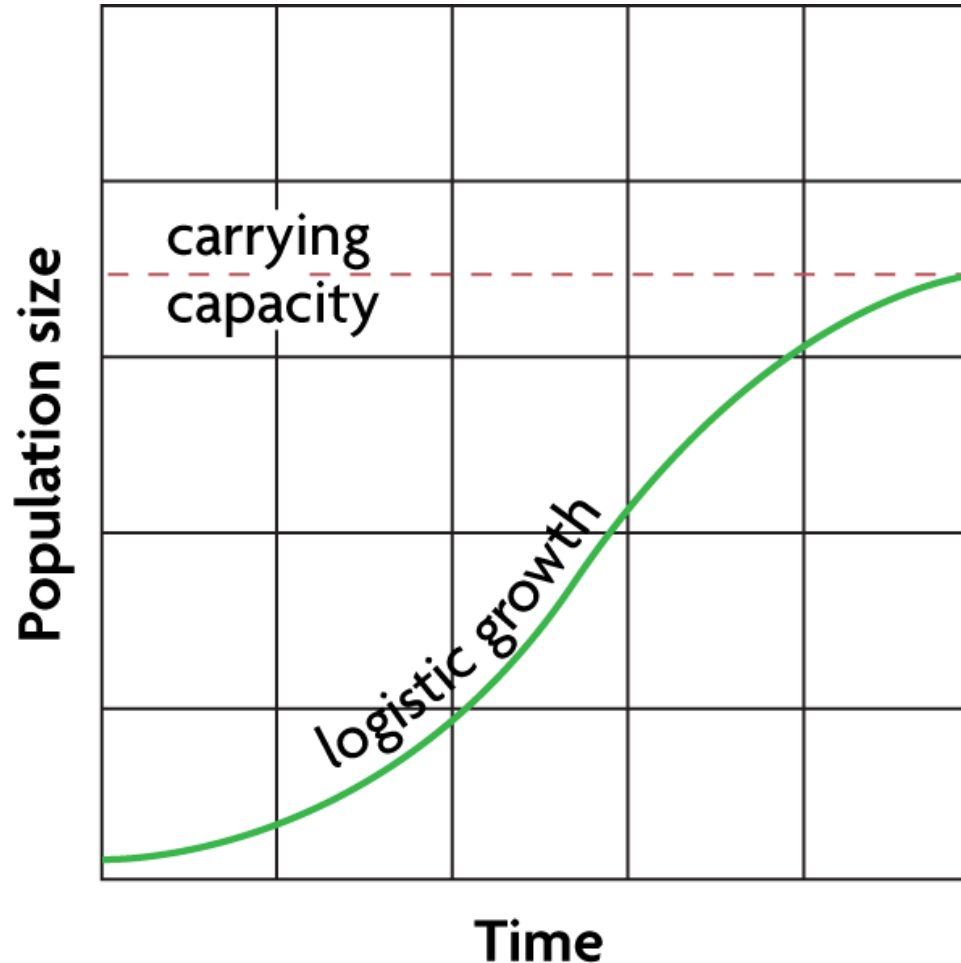
▶ Population growth is based on available resources.

- Exponential growth is a rapid population increase due to an abundance of resources.



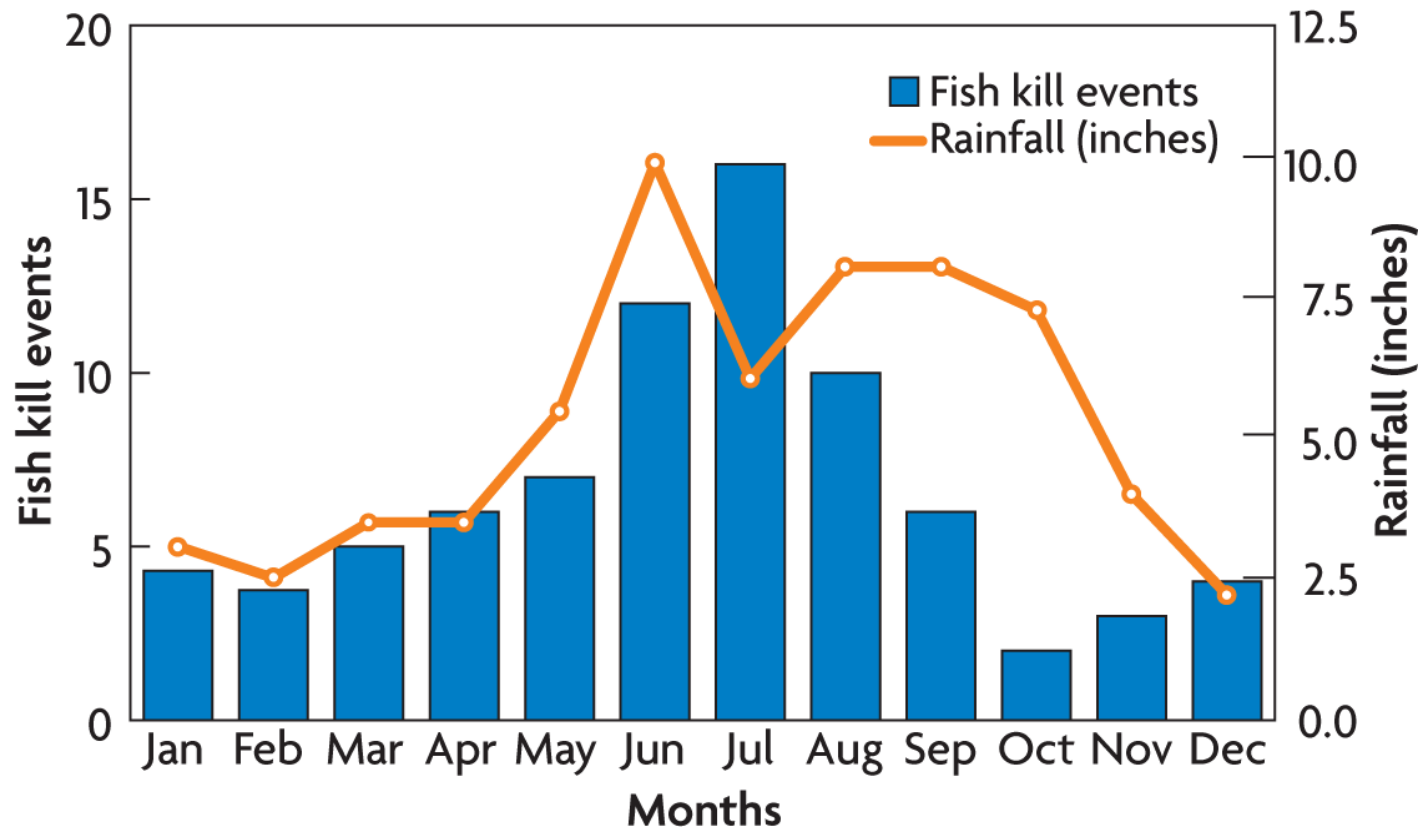
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- Logistic growth is due to a population facing limited resources.



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- 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.



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▶ Ecological factors limit population growth.

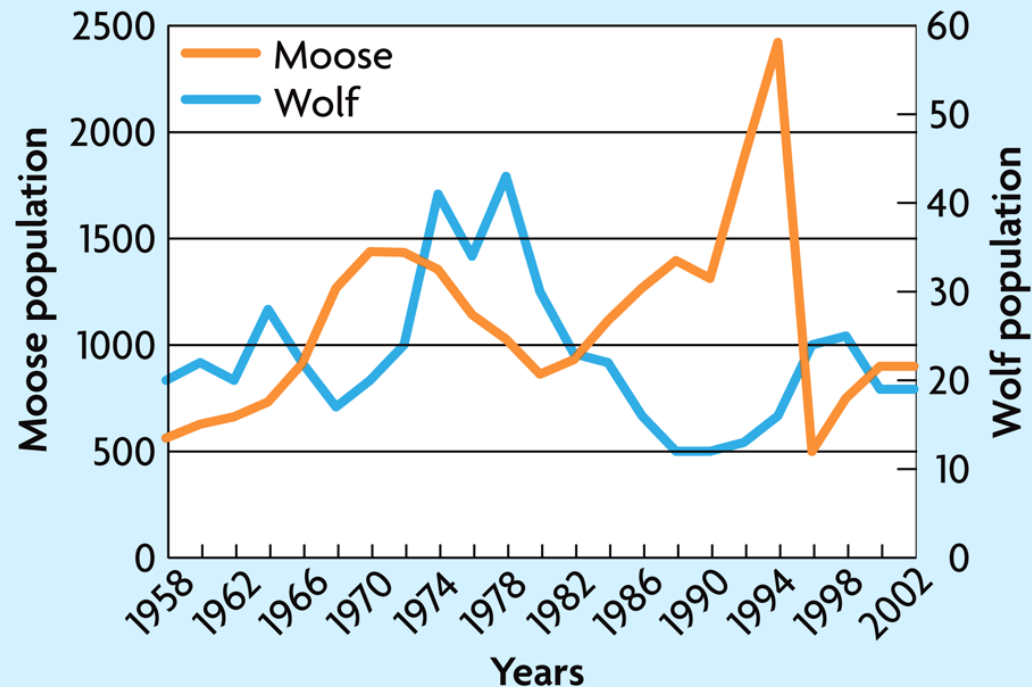
- A limiting factor is something that keeps the size of a population down.
- Density-dependent limiting factors are affected by the number of individuals in a given area.



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

FIGURE 14.13 DENSITY-DEPENDENT LIMITING FACTORS



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

