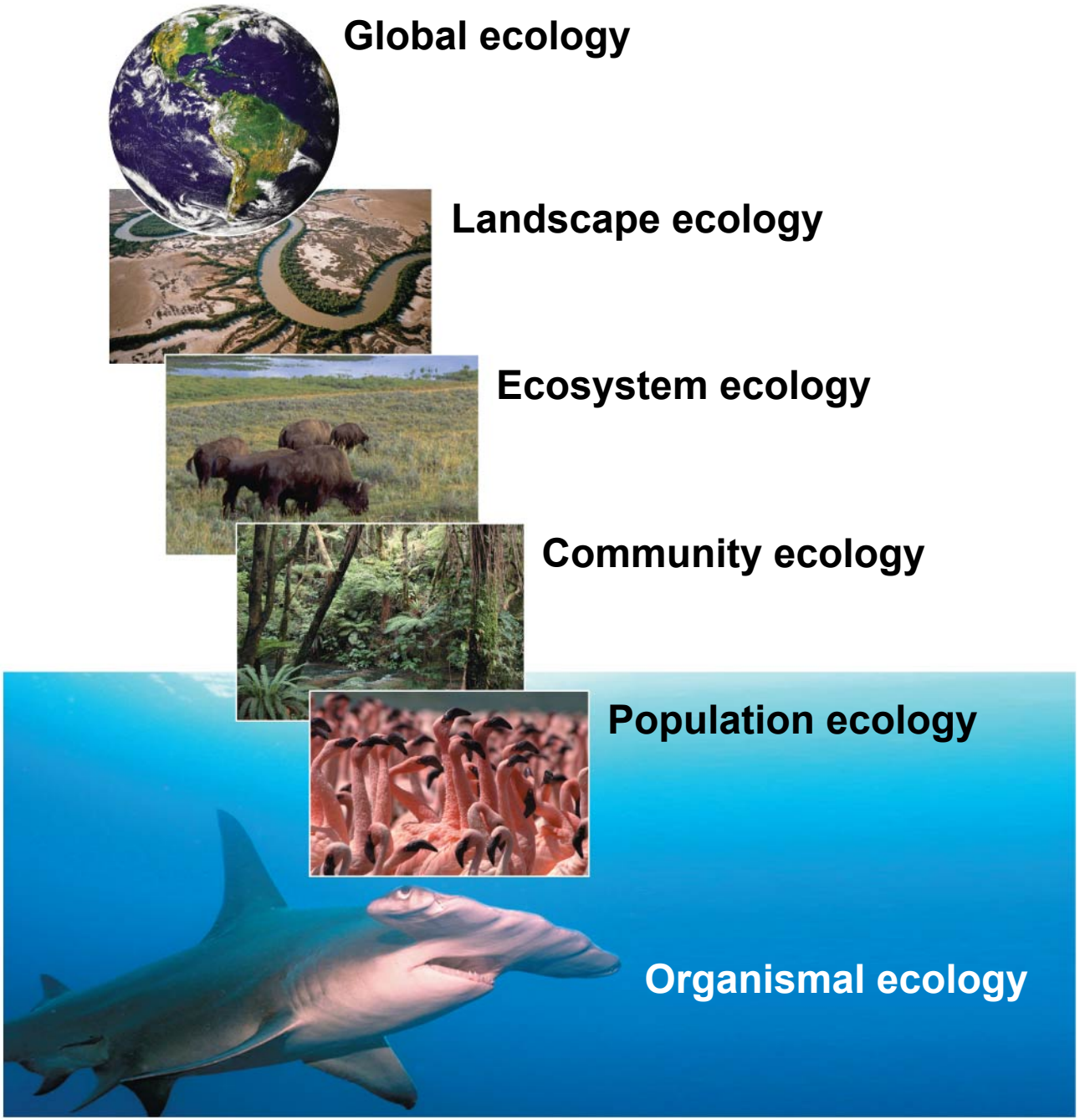

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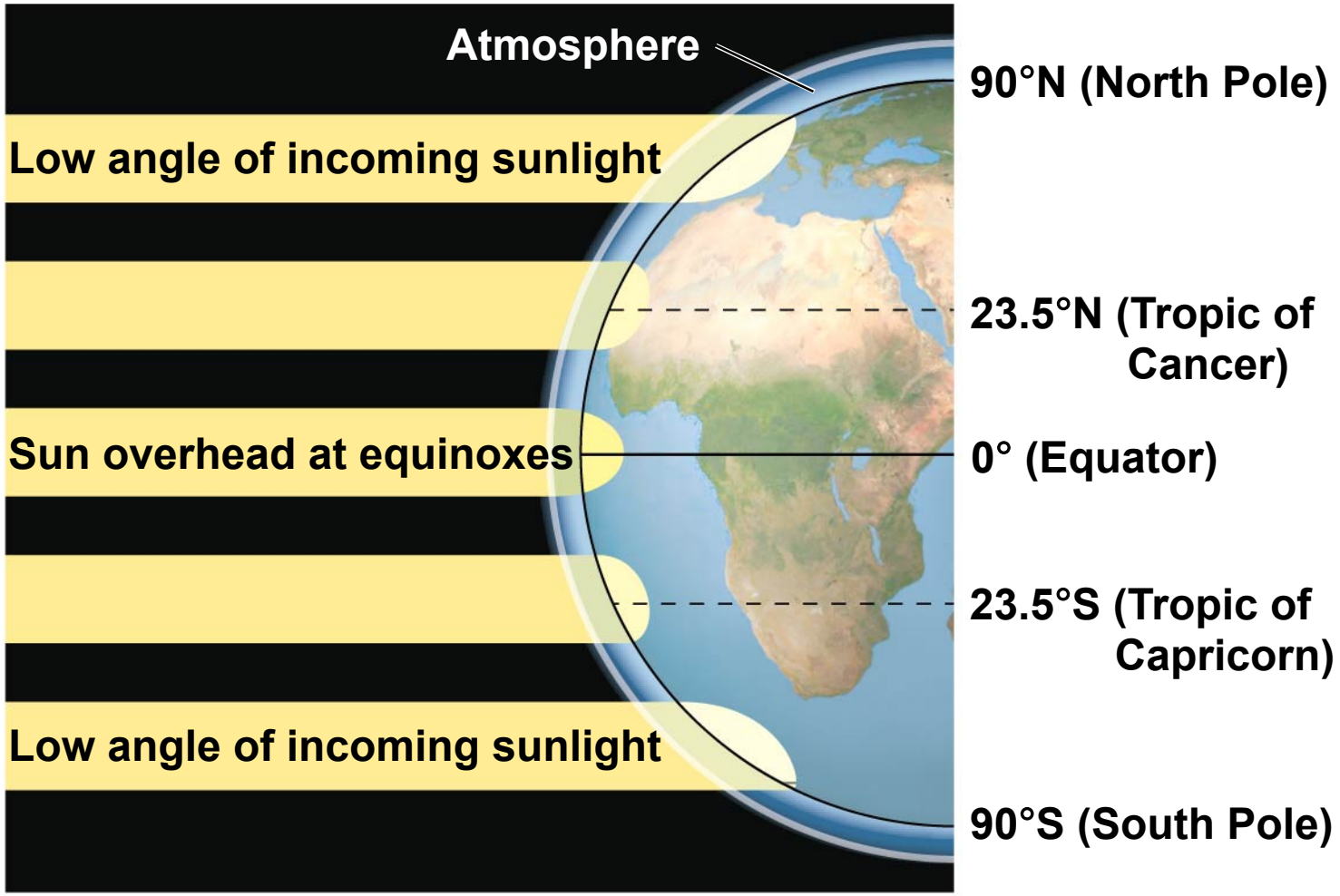

Latitudinal variation in sunlight intensity

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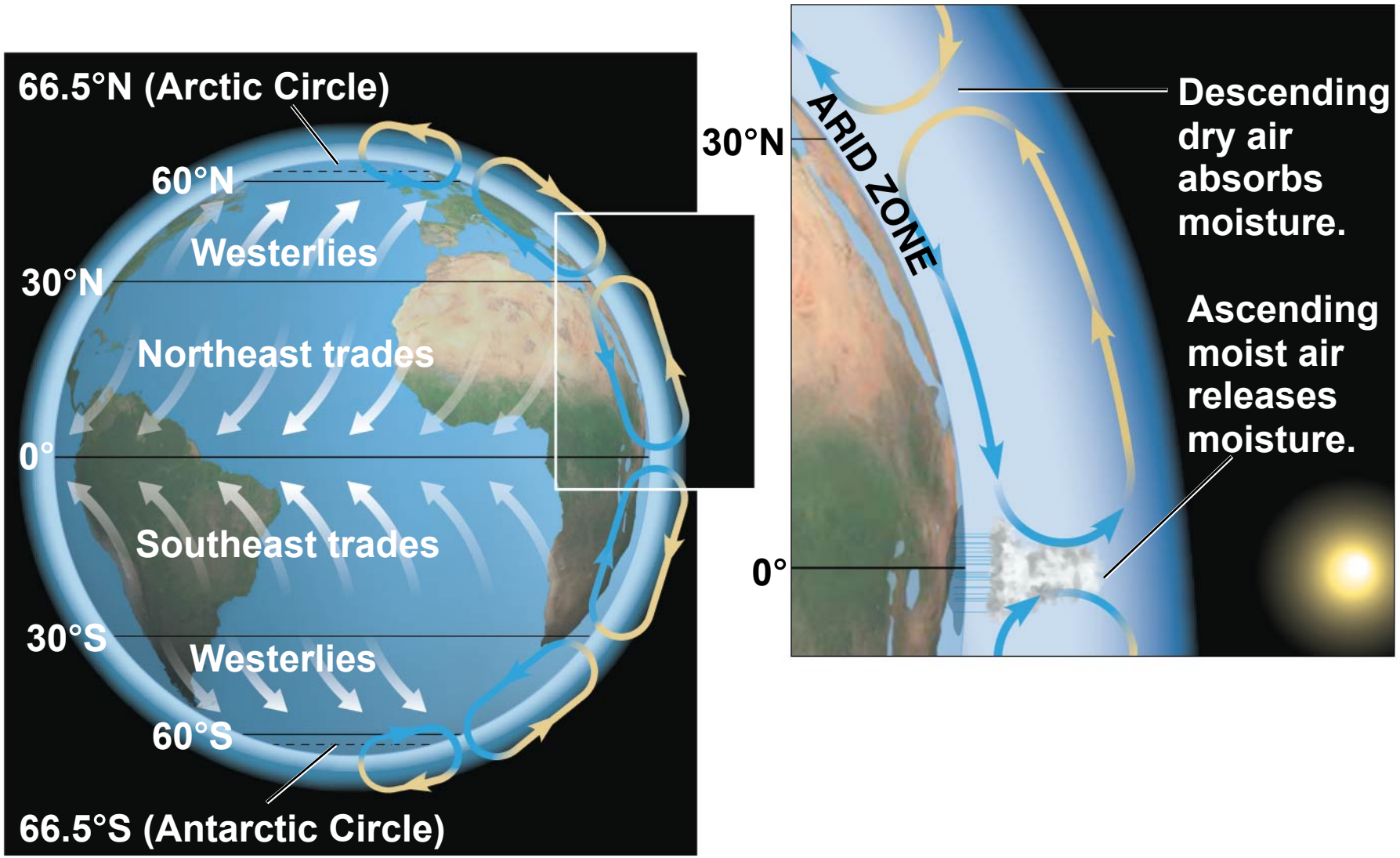

Global air circulation and precipitation patterns

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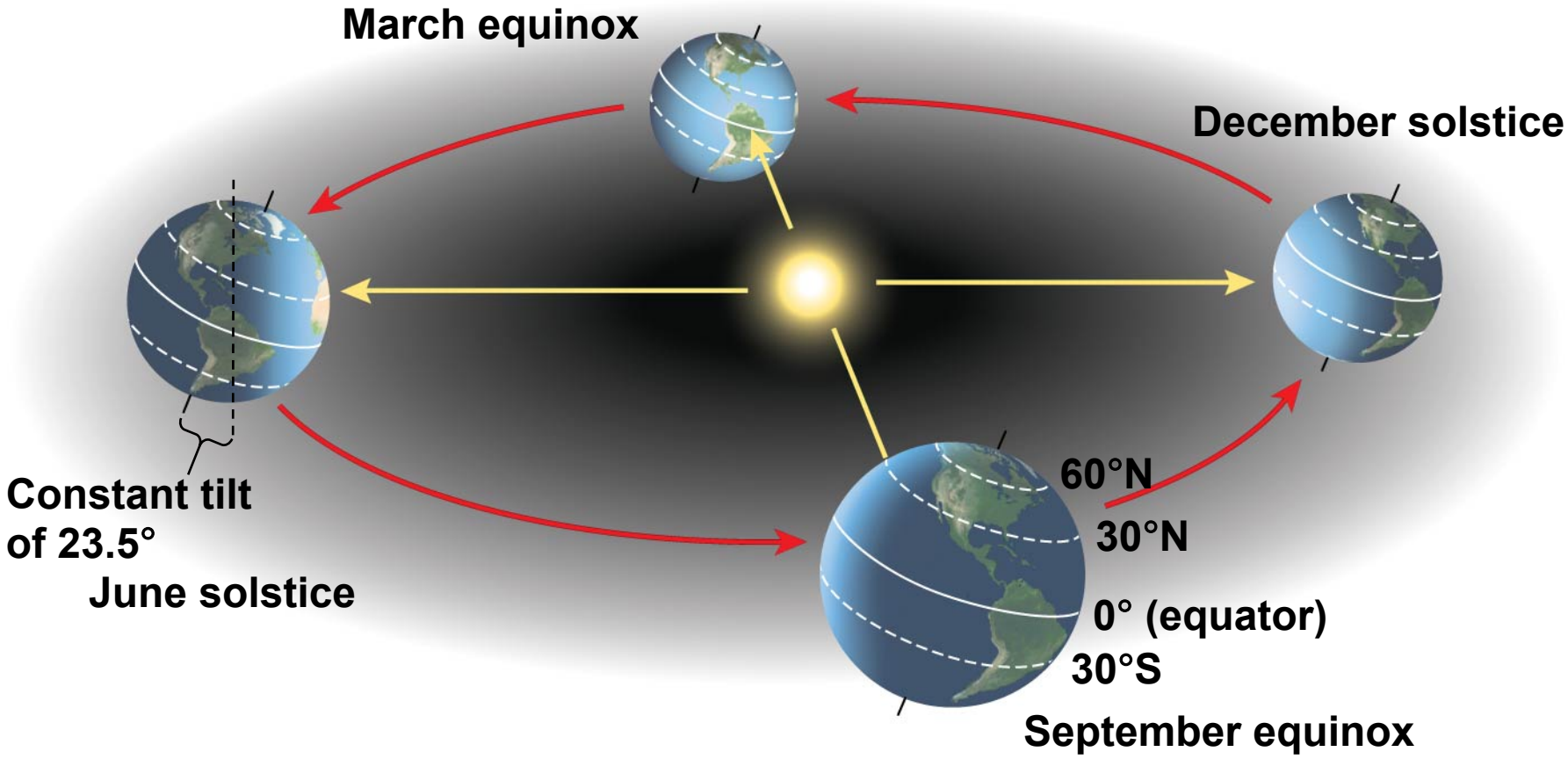

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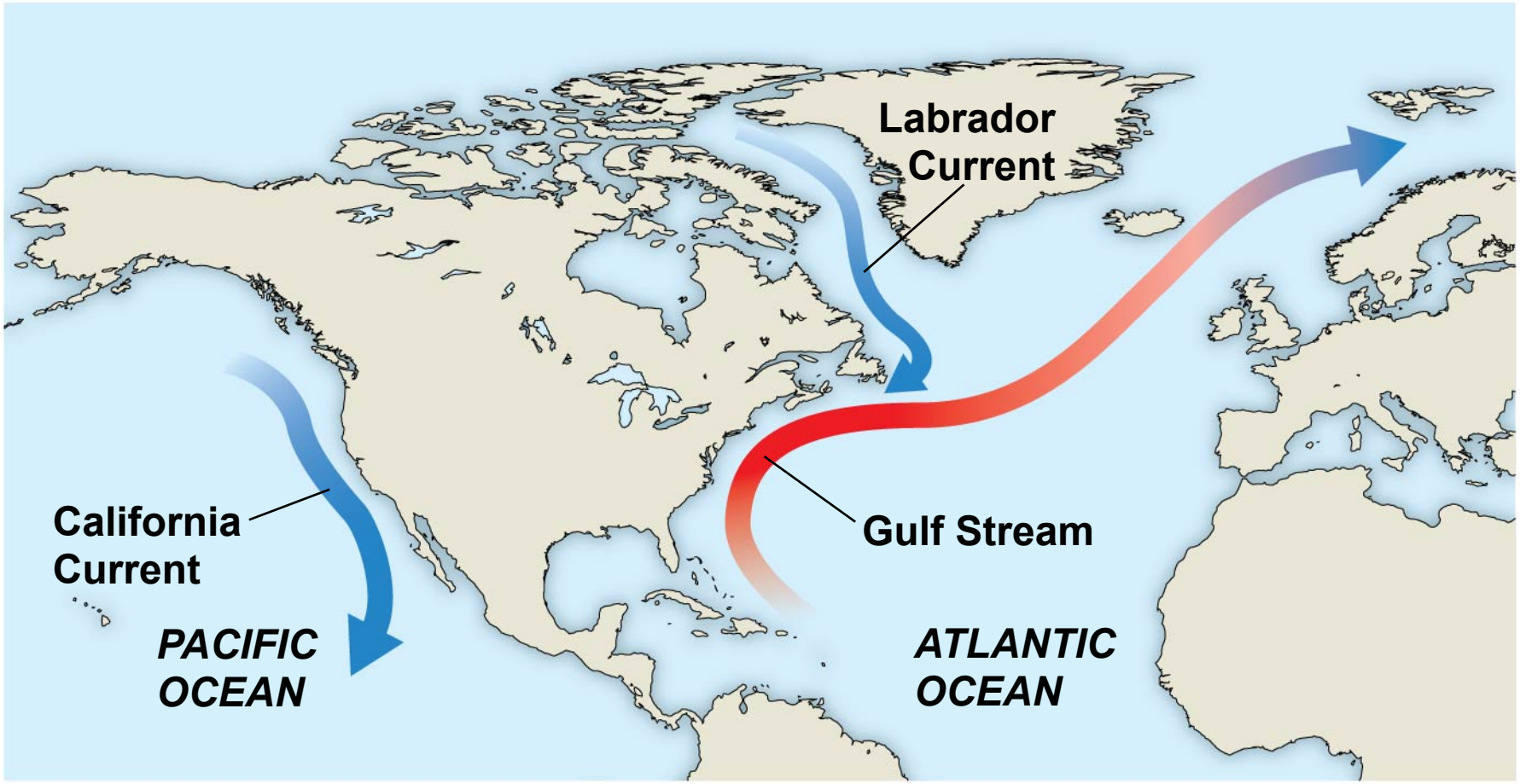

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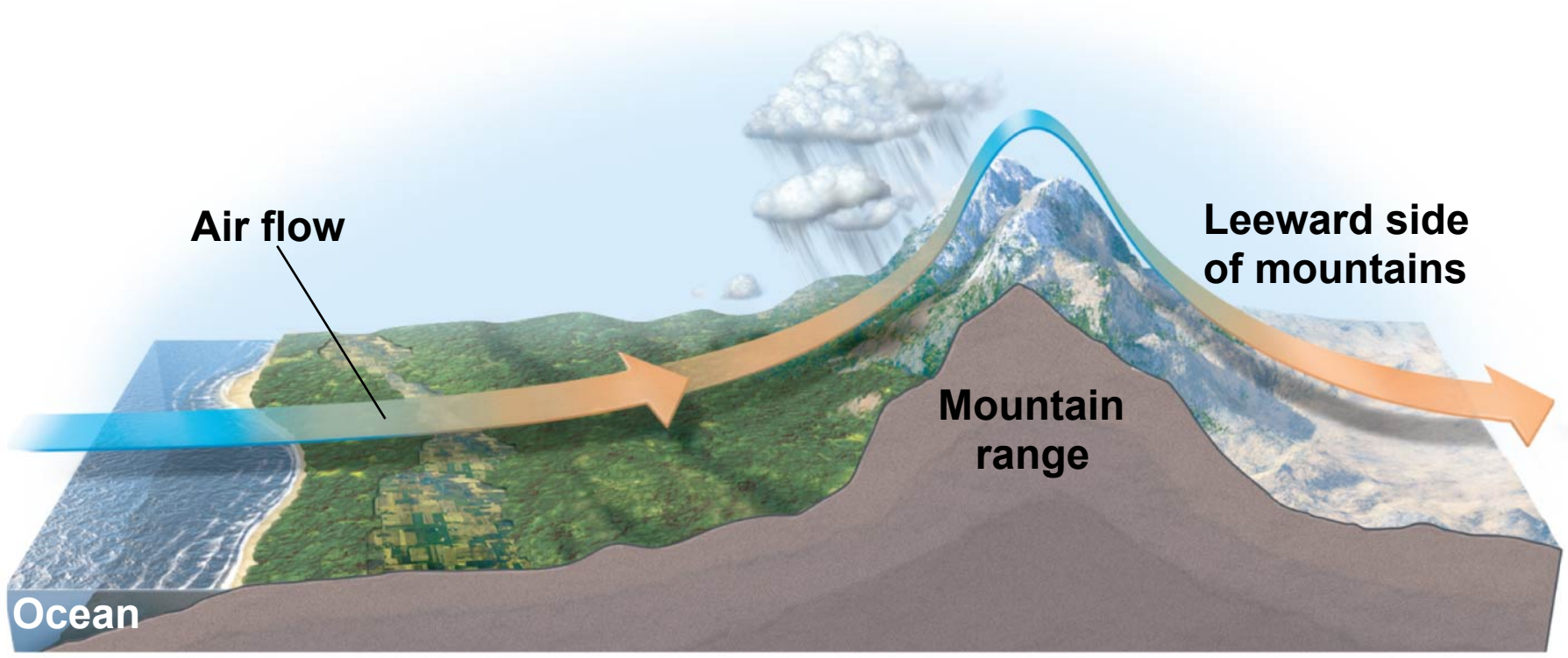

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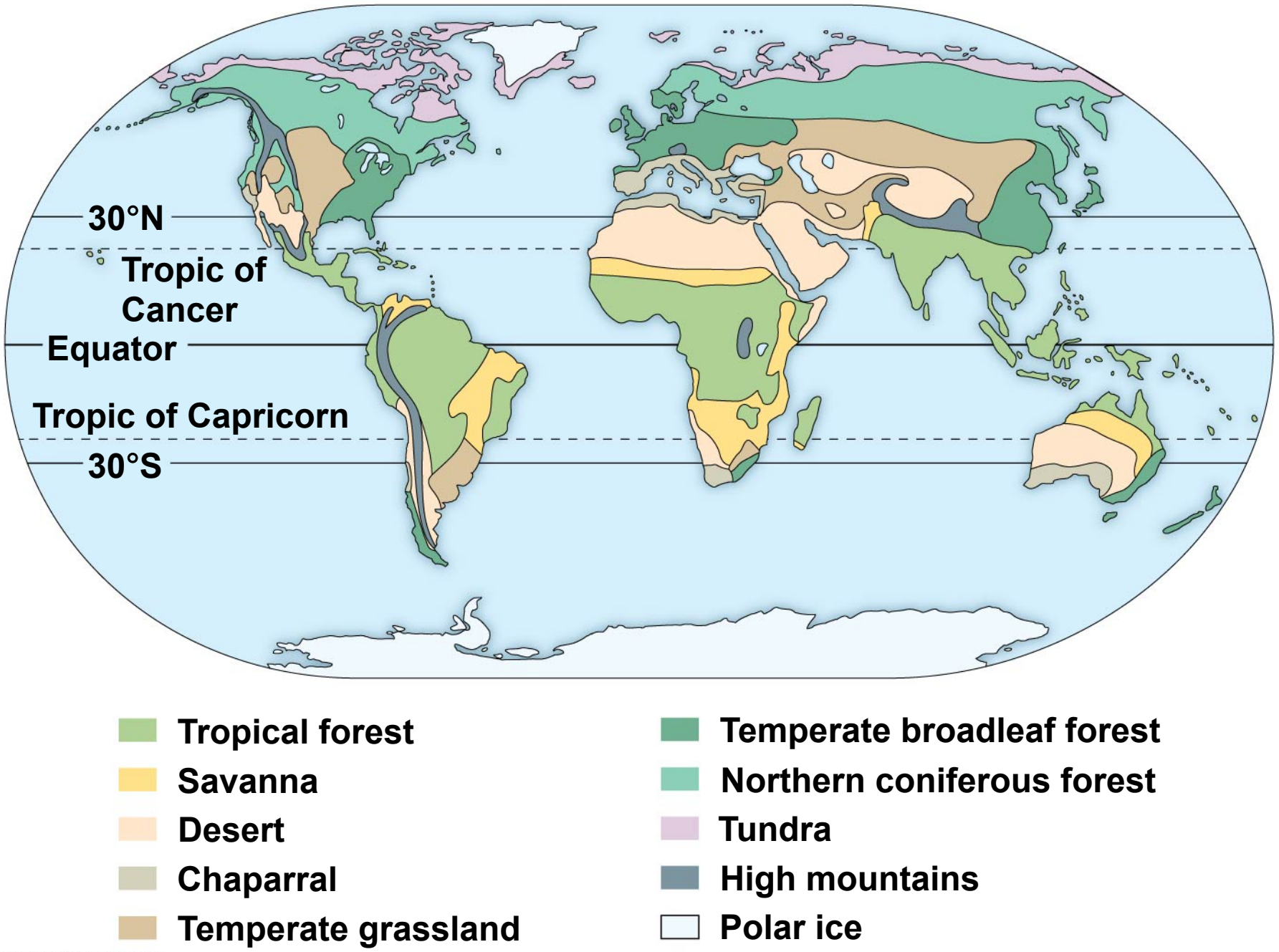

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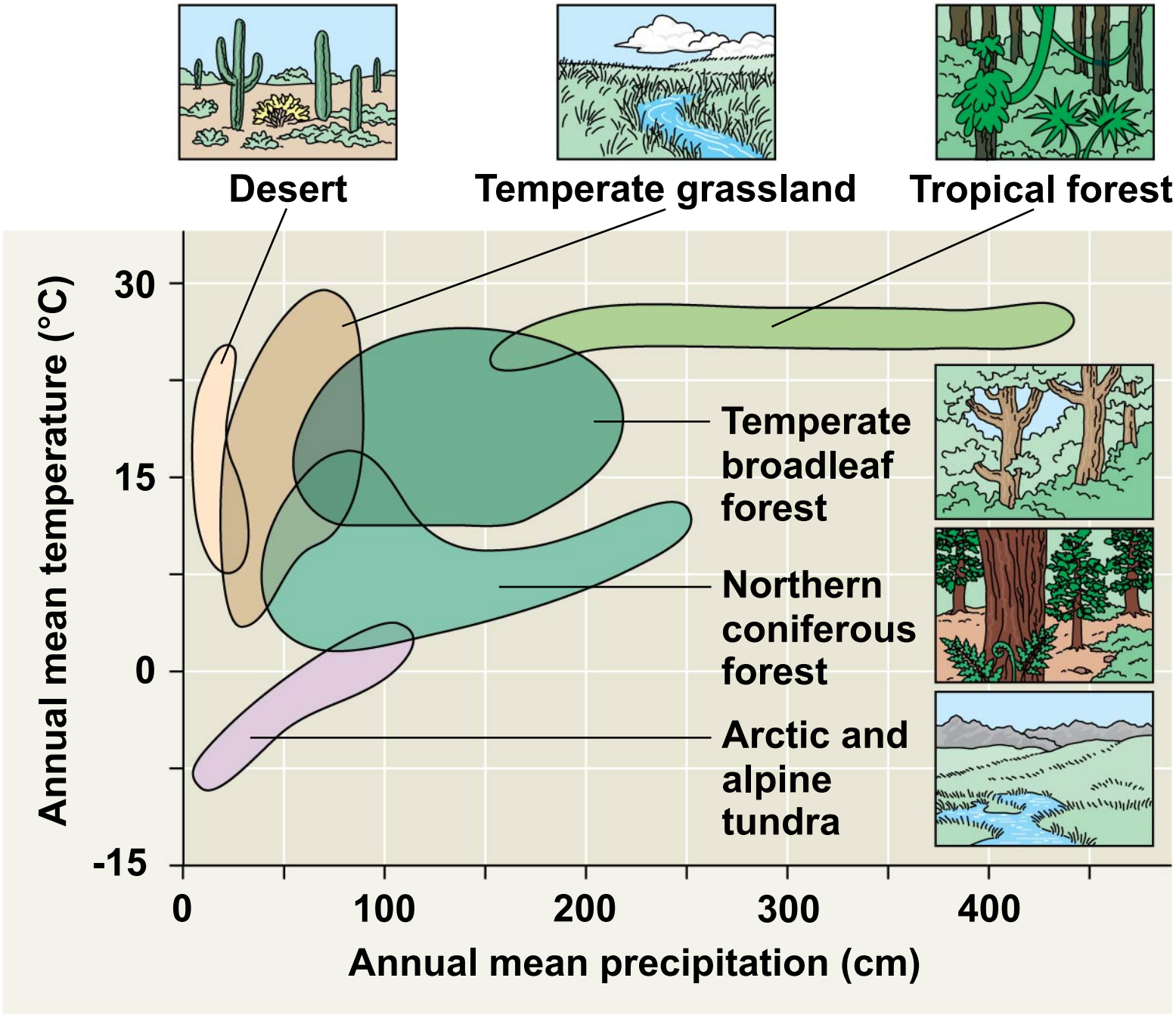

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A tropical rain forest in Costa Rica

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A savanna in Kenya

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Organ Pipe Cactus National Monument, Arizona

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An area of chaparral in California

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A grassland in Mongolia

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A coniferous forest in Norway

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A temperate broadleaf forest in New Jersey

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Dovrefjell National Park, Norway

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A basin wetland in the United Kingdom

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An oligotrophic lake in Alberta, Canada

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A headwater stream in Washington

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A rocky intertidal zone on the Oregon coast

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A coral reef in the Red Sea

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Open ocean near Iceland

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A deep-sea hydrothermal vent community

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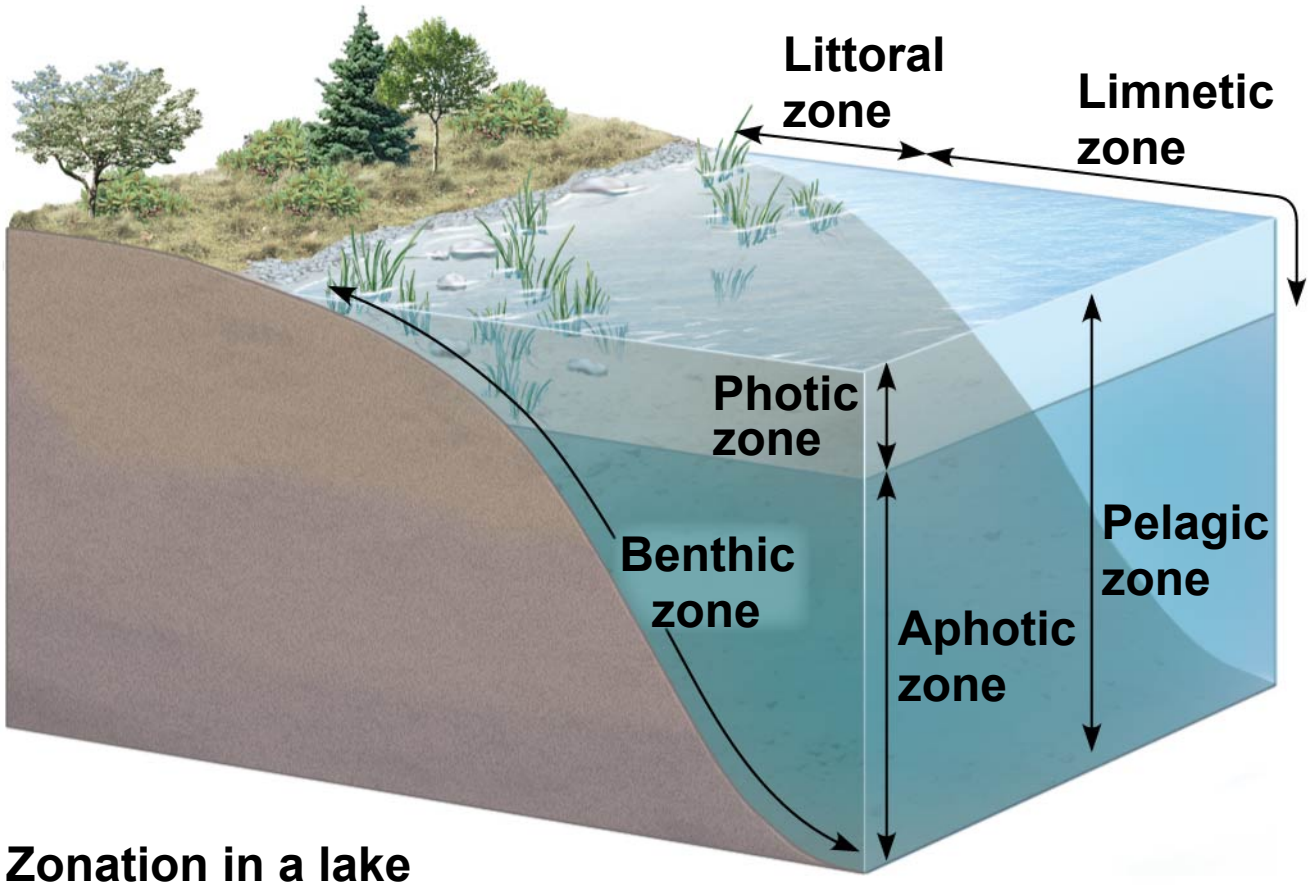

Zonation in a lake

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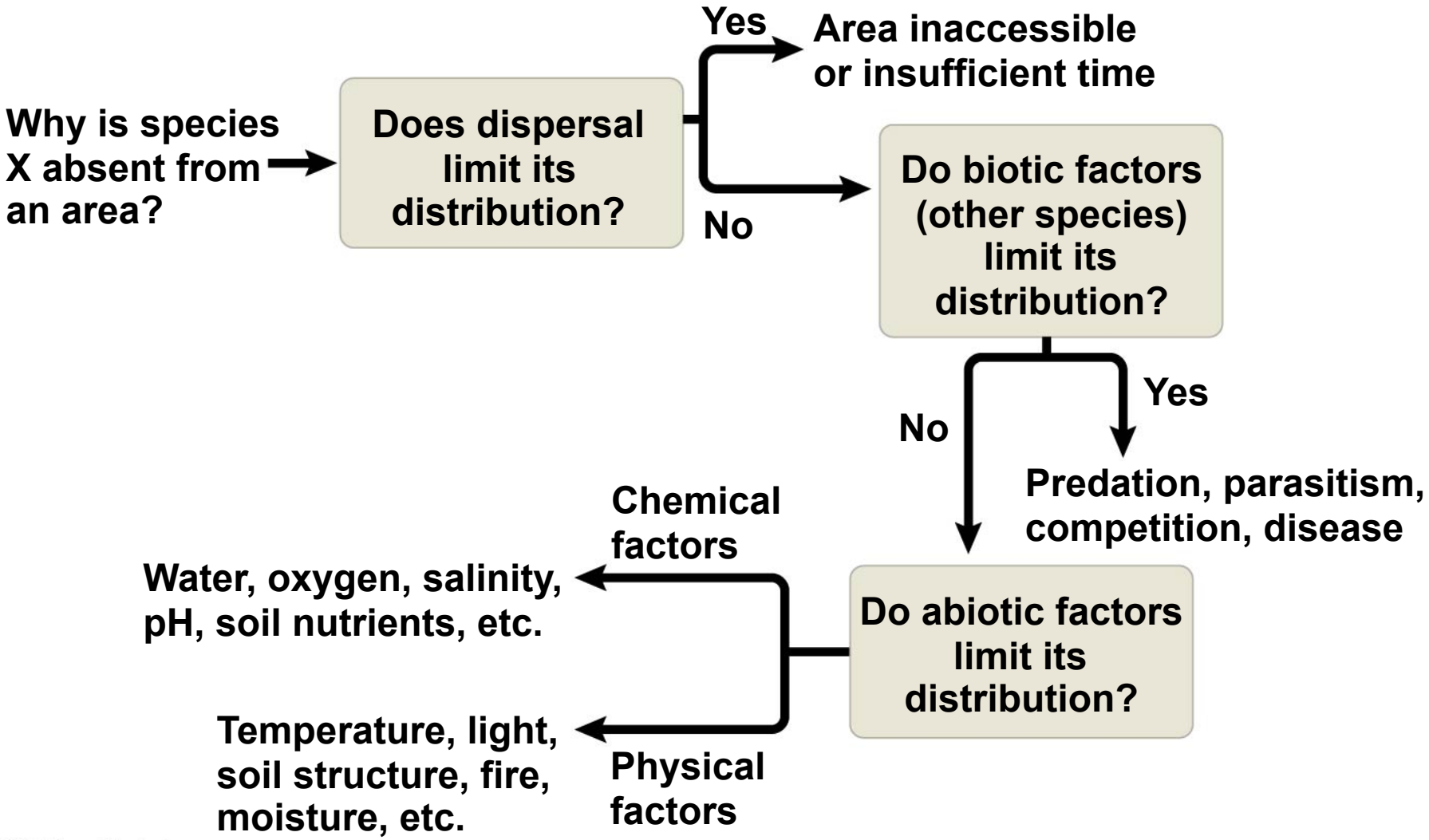

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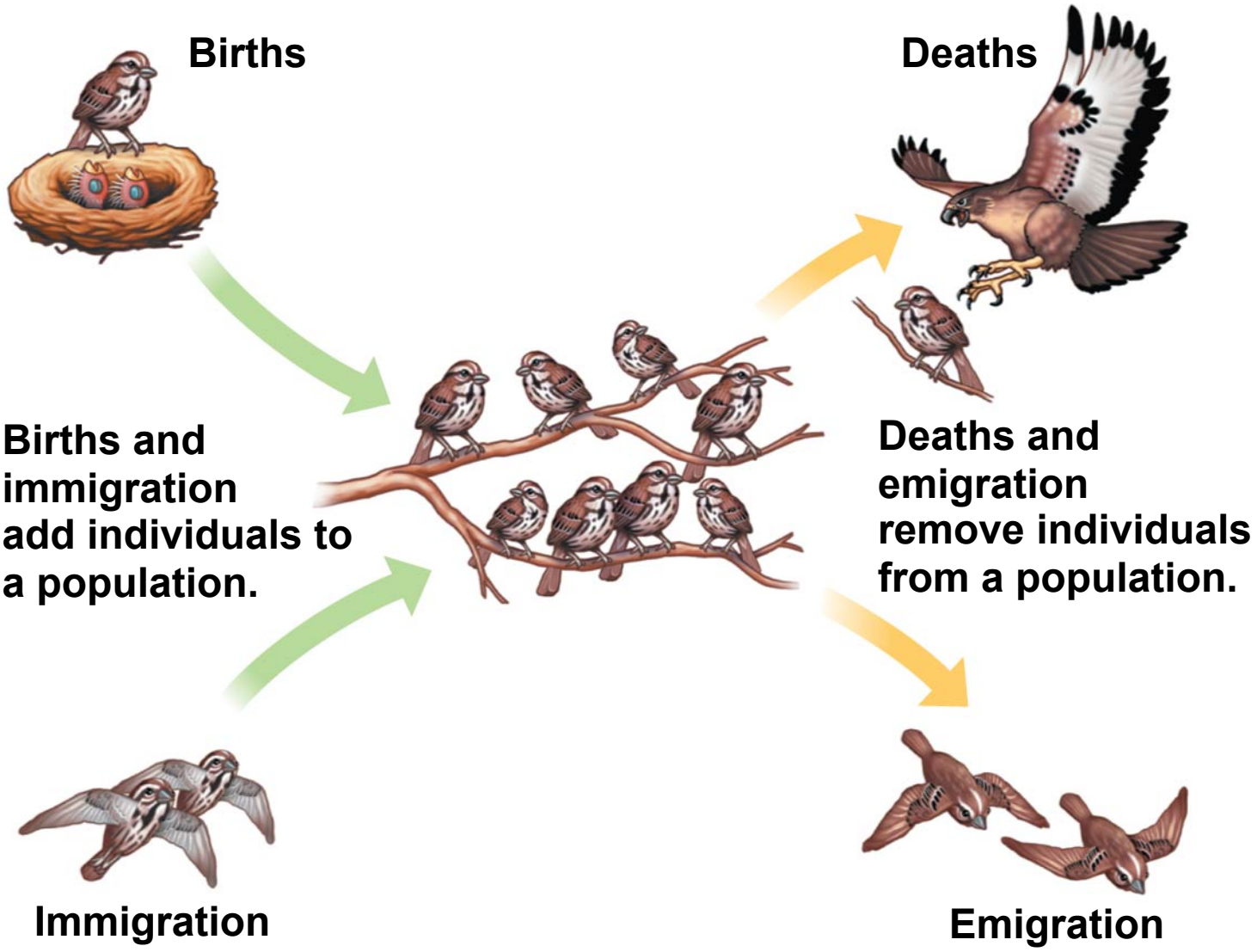

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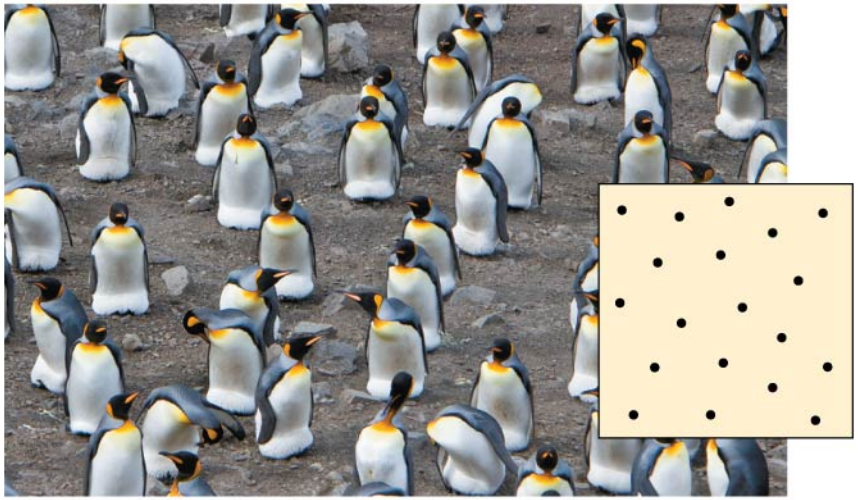
(a) Clumped



(b) Uniform

(c) Random

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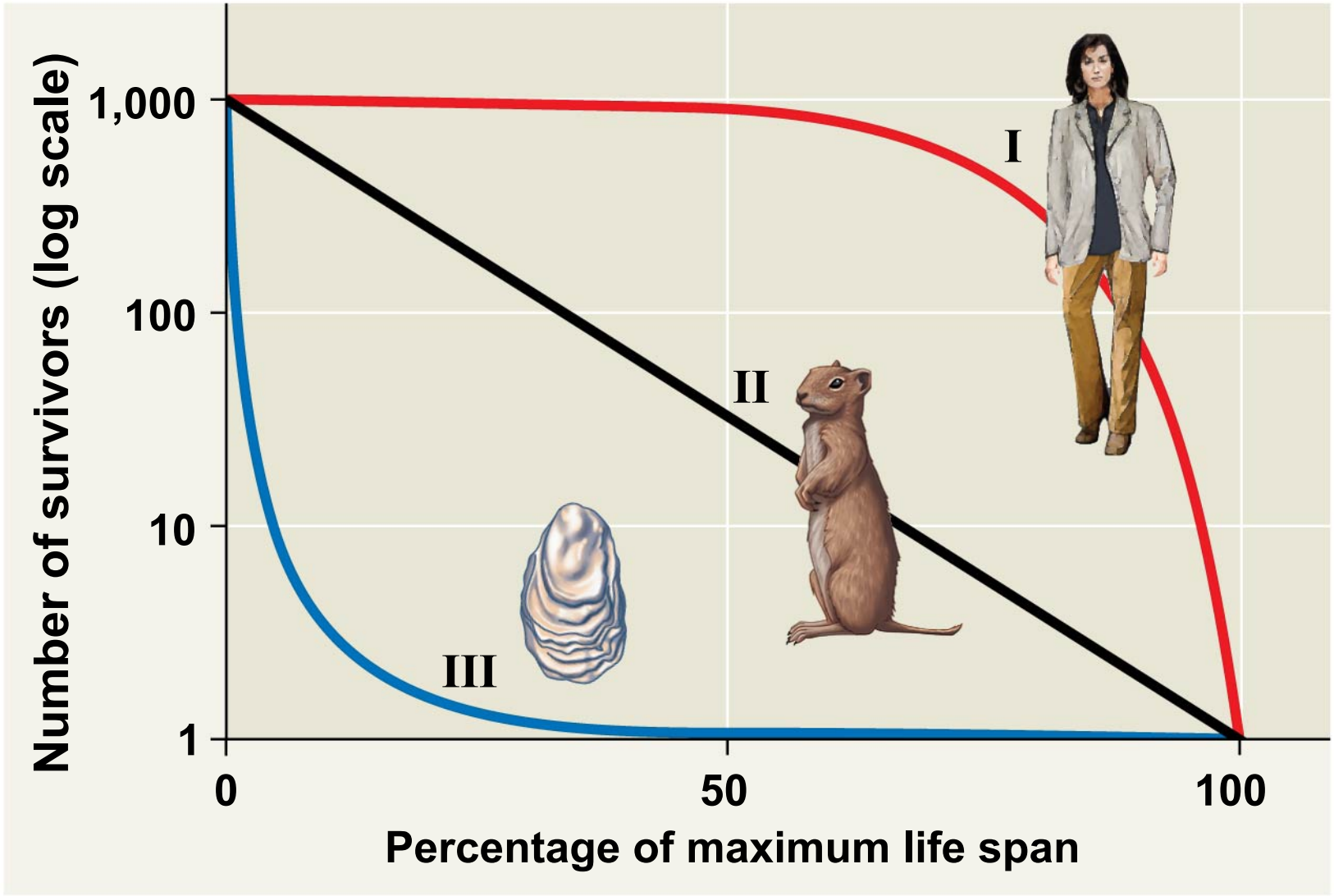

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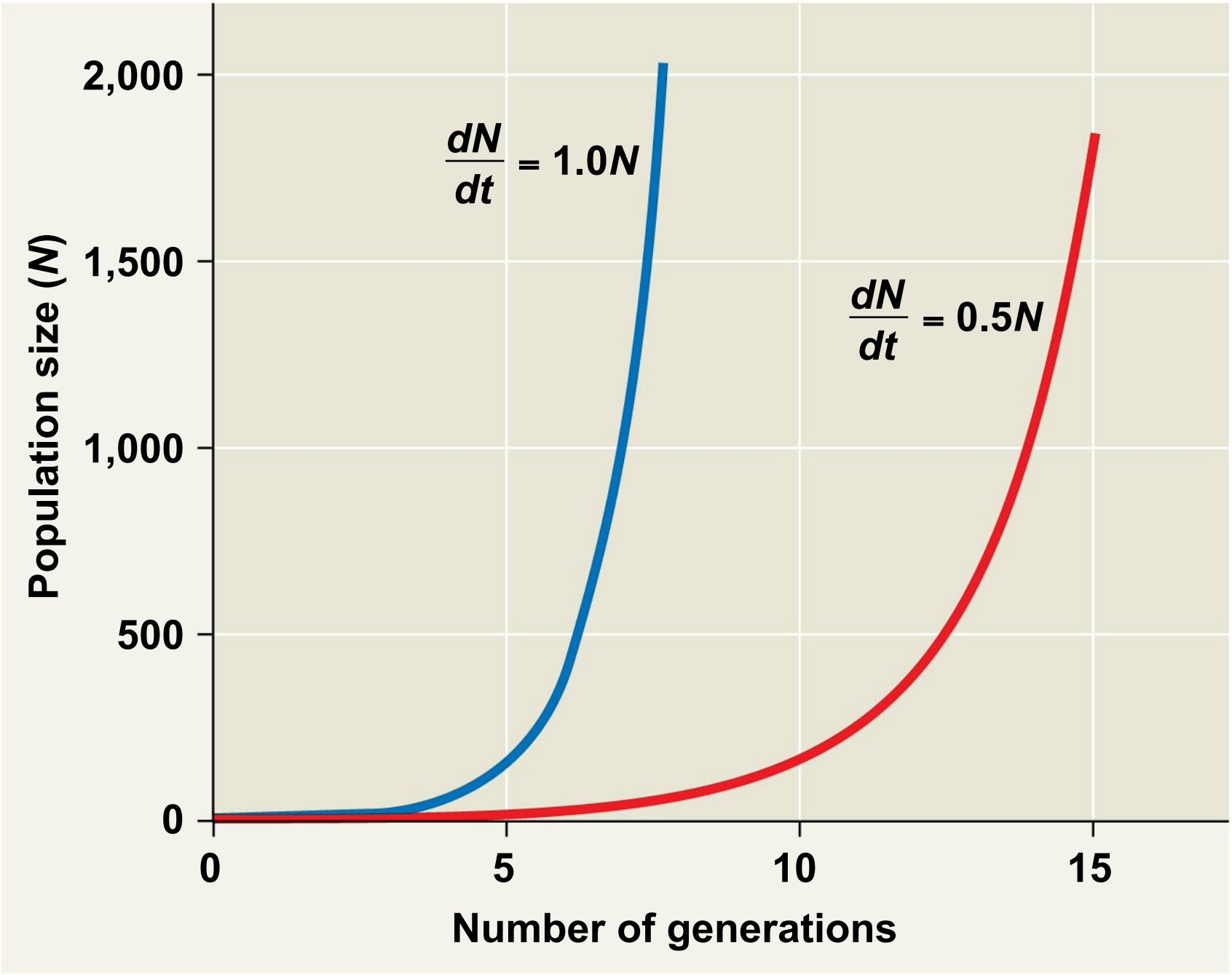

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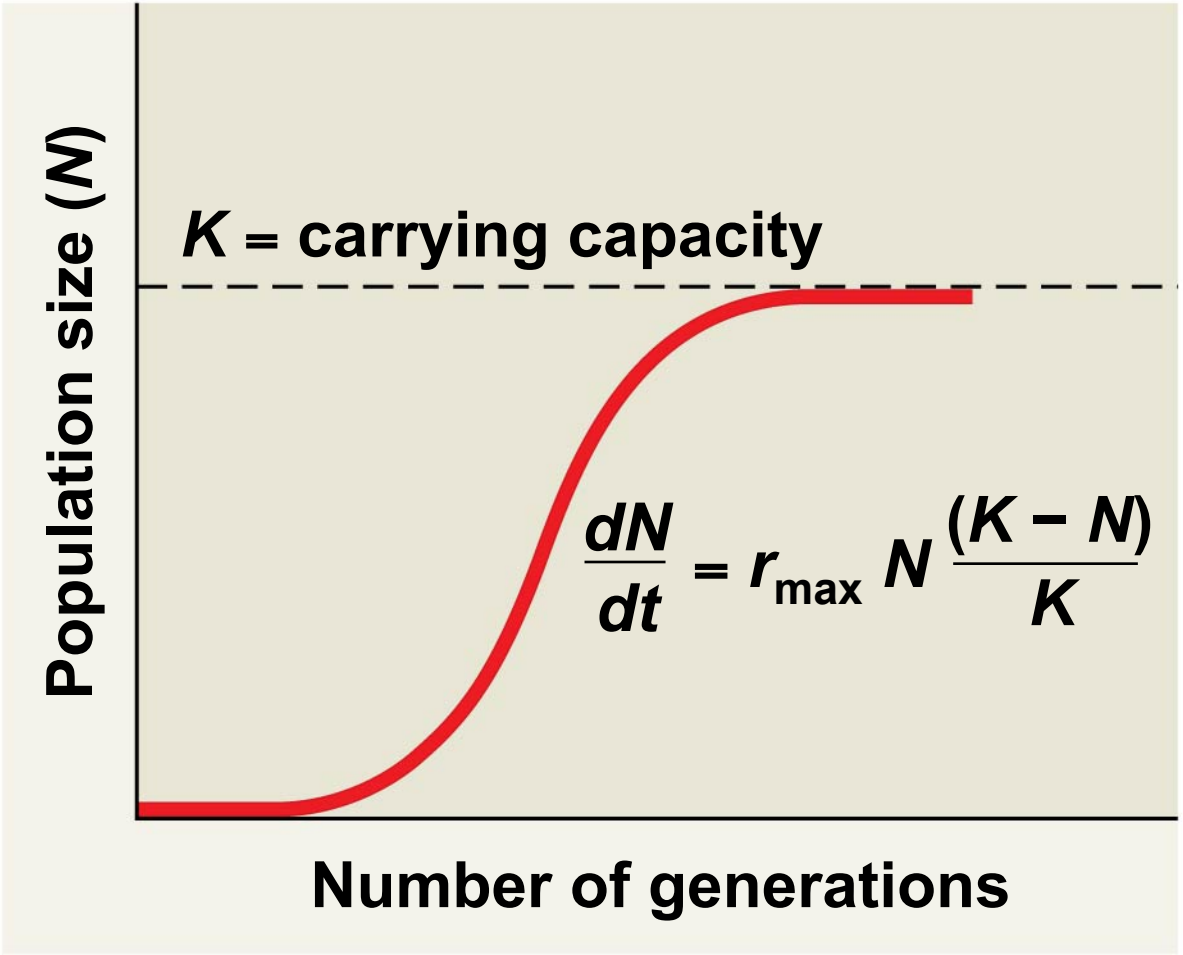

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Table 40.2 Logistic Growth of a Hypothetical Population ($K = 1{,}500$)

Population Size (N)	Maximum Rate of Increase (r_{max})	$\frac{K - N}{K}$	Per Capita Rate of Increase $r_{max}\frac{(K - N)}{K}$	Population Growth Rate* $r_{max}N\frac{(K - N)}{K}$
25	1.0	0.98	0.98	+ 25
100	1.0	0.93	0.93	+ 93
250	1.0	0.83	0.83	+ 208
500	1.0	0.67	0.67	+ 333
750	1.0	0.50	0.50	+ 375
1,000	1.0	0.33	0.33	+ 333
1,500	1.0	0.00	0.00	0

*Rounded to the nearest whole number.

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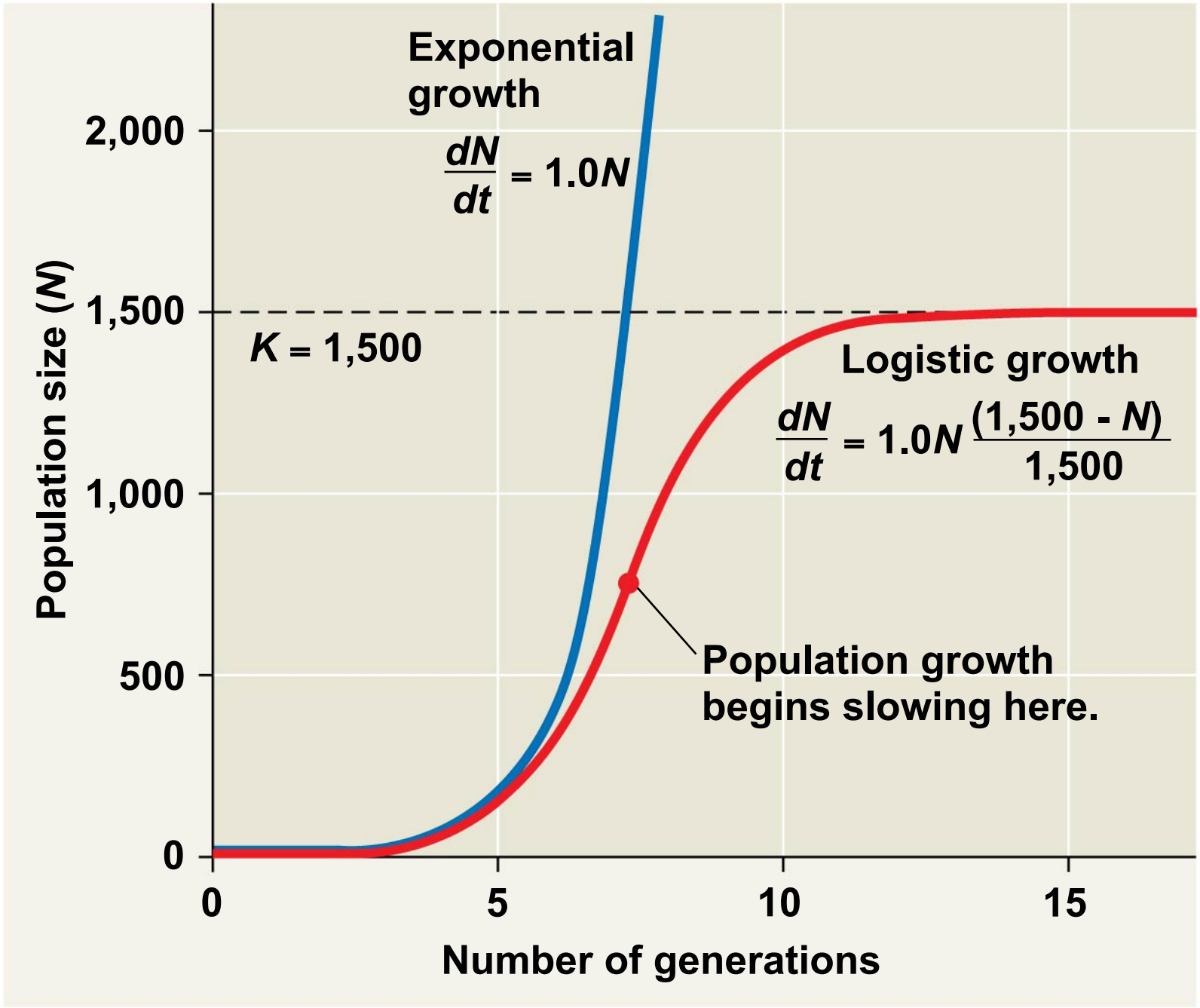

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Dandelions grow quickly and release a large number of tiny fruits.

The Brazil nut tree (above), produces a moderate number of large seeds in pods (left).

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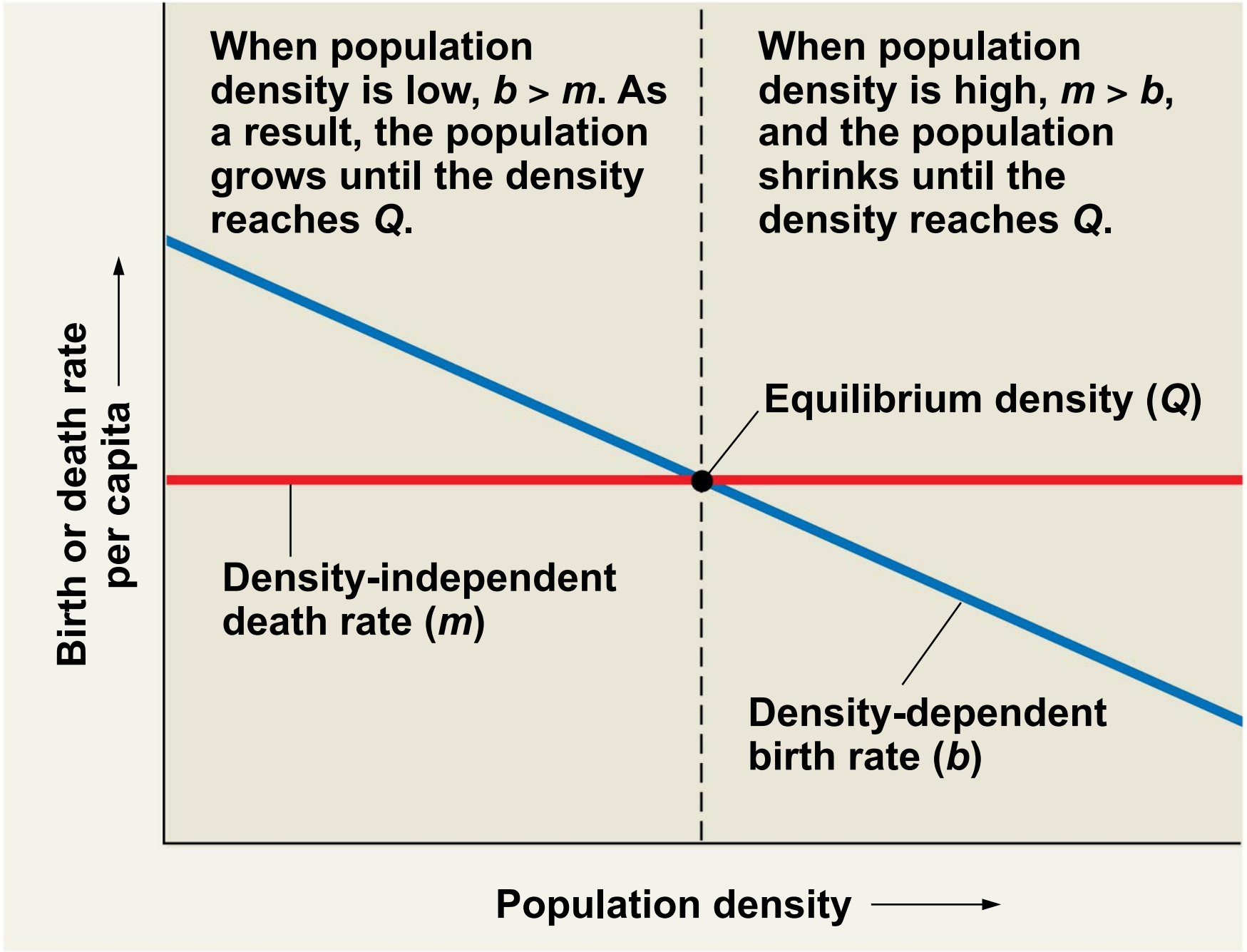

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Competition for resources

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Predation

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Disease

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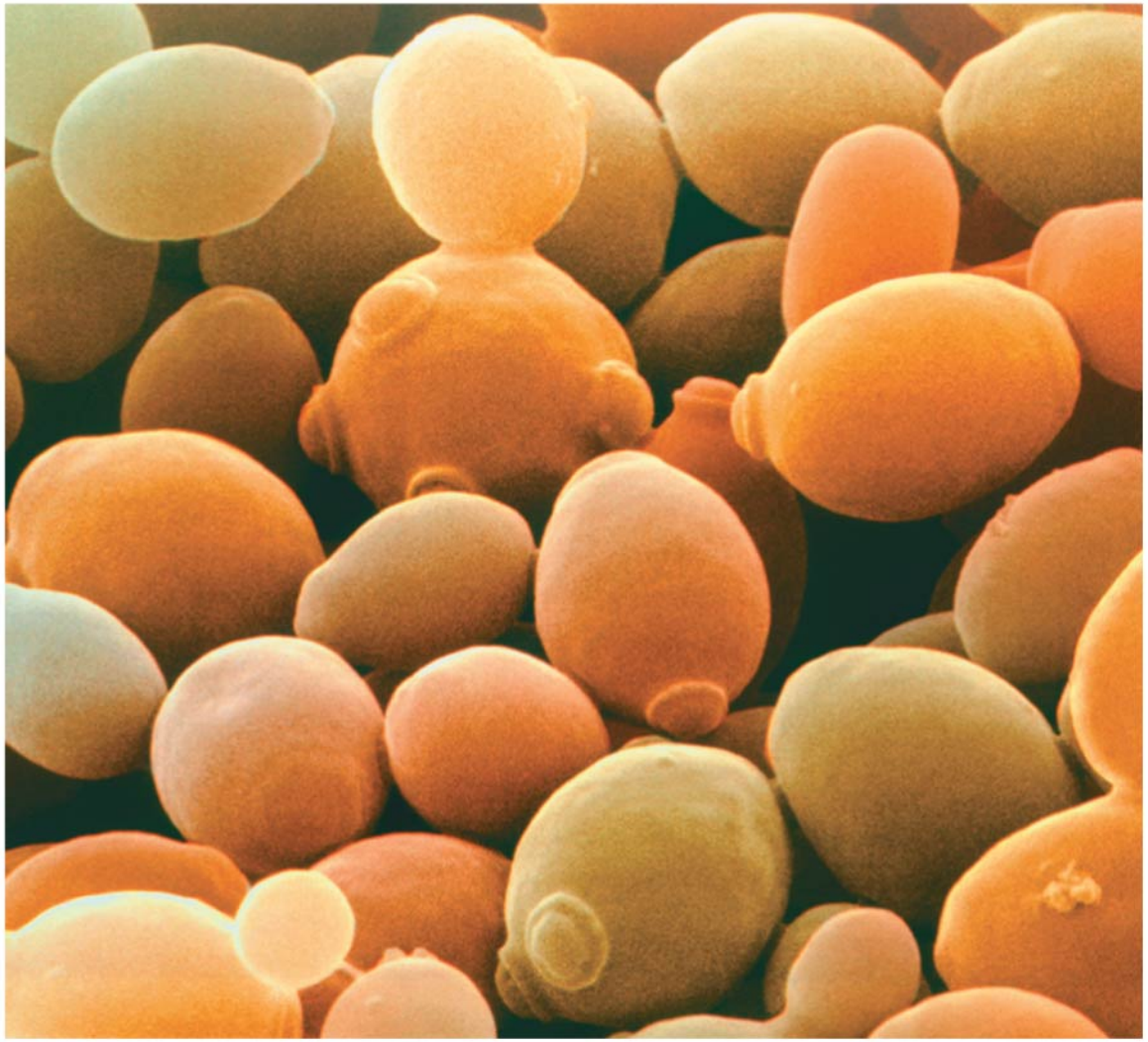

Toxic wastes

5 μm

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Territoriality

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Intrinsic factors

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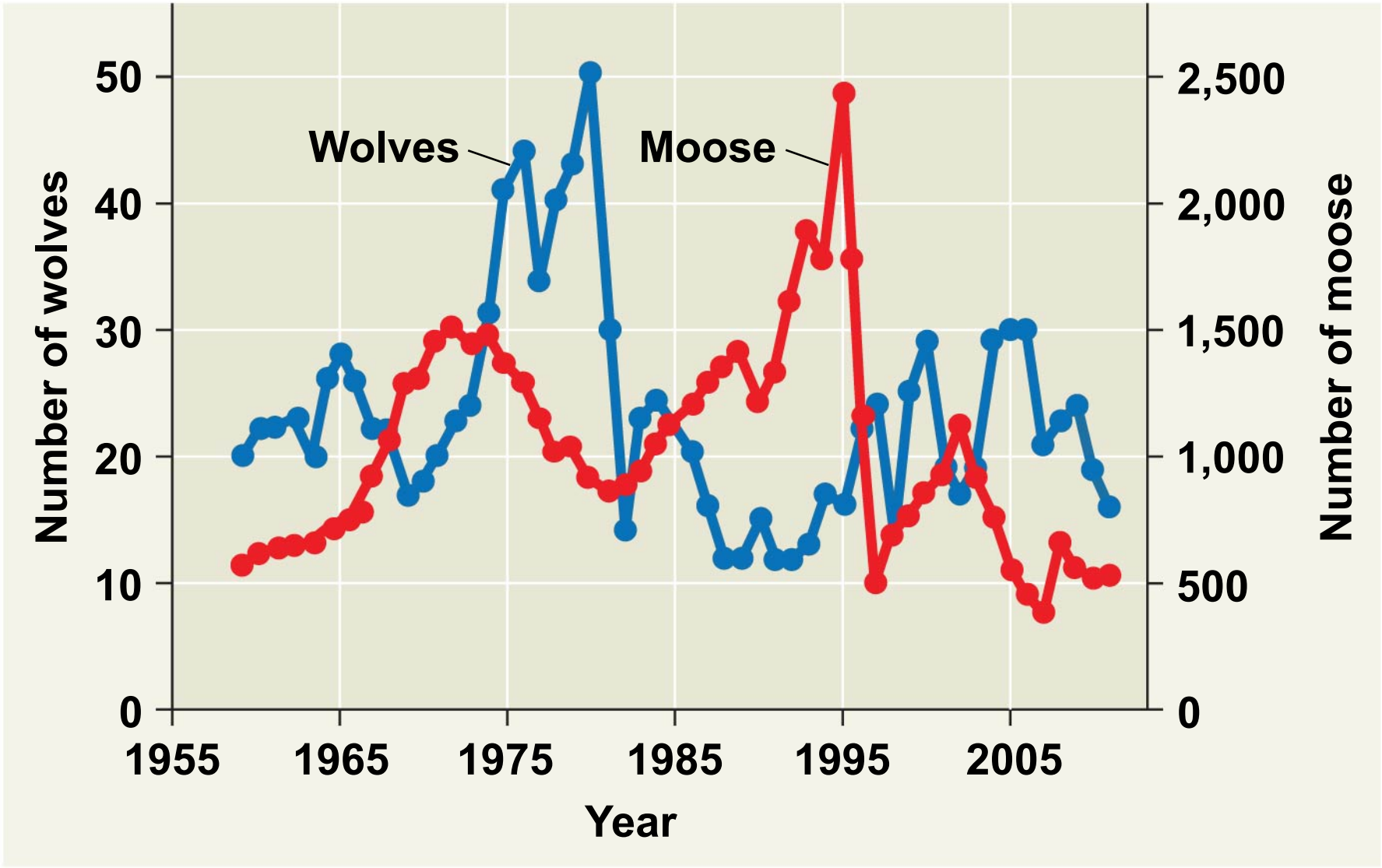

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