Chapter 9: Population Dynamics, Carrying Capacity, and Conservation Biology

Study-packet

*Read pgs. 198-202*

Define the following terms:

<p>| | |</p>
<table>
<thead>
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<tbody>
<tr>
<td>1.</td>
<td>Population dynamics</td>
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<td>2.</td>
<td>Population change equation</td>
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<td>3.</td>
<td>Zero population growth</td>
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<td>4.</td>
<td>Biotic potential (intrinsic rate of growth (r))</td>
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<td>5.</td>
<td>Environmental resistance</td>
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<td>6.</td>
<td>Carrying capacity (K)</td>
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<td>7.</td>
<td>Minimum viable population (MVP)</td>
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<td>8.</td>
<td>Exponential growth</td>
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<td>9.</td>
<td>Logistic growth</td>
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<td>10.</td>
<td>Overshoot</td>
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<td>11.</td>
<td>Reproductive lag time</td>
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<td>12.</td>
<td>Dieback (crash)</td>
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<td>13.</td>
<td>Density-independent population controls</td>
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</tbody>
</table>
14. Density-dependent population controls

15. Population fluctuation: stable


17. Population fluctuation: irregular

18. Population fluctuation: cyclic

**Read pgs. 202-206**

**Define the following terms:**

19. Lynx-hare cycle (predator-prey cycles)

20. Top-down control

21. Bottom-up control

22. Asexual reproduction

23. Sexual reproduction

24. R-selected species (opportunists)

25. K-selected species (competitor)
Read the Case Study “Wolf and Moose Interactions on Isle Royale” on pg. 204

What is the primary ecological lesson to be learned from the moose-wolf interaction on Isle Royale?

Read pgs. 206-209

Define the following terms:

31. Conservation

32. Conservation biology

33. Wildlife management

34. Bioinformatics
Read the Connections “Ecological Surprises” on pg. 208

Do you believe that the beneficial effects of spraying pesticides on Sabah outweigh the resulting unexpected and harmful effects? Explain

Chapter 9 Review Questions/ Critical Thinking pgs. 209-210

5. What are four characteristics of a population with a high intrinsic rate of increase \((r)\)?

7. Distinguish between exponential and logistic growth of a population and give an example of each type.

9. Distinguish between density-dependent and density-independent factors that affect a population's size and give an example for each.
11. Distinguish between top-down control and bottom-up control of a population’s size.

17. What are the three underlying principles of conservation biology?

18. List seven potentially harmful ways in which humans modify natural ecosystems?

20. List five principles we could use to help us live more sustainably.