ANSWER KEY.

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Conservation and Restoration

Biology | ANSWER KEY

Answer in complete sentences where asked. Show your work for calculations and use the data as evidence.

1. Name a conservation strategy that responds to each problem.

Problem	Conservation strategy
(a) A dam blocks the habitat of a fish population	
(b) A lake receives too much fertilizer runoff	
(c) A fish is caught faster than it can recover	

(a) **Connect habitat (for example, a fish passage around the dam)** (b) **Reduce pollution (for example, less fertilizer or buffer strips)** (c) **Limit harvest (for example, catch limits)**

2. Think about how solutions are evaluated.

(a) Name two criteria used to judge a solution.

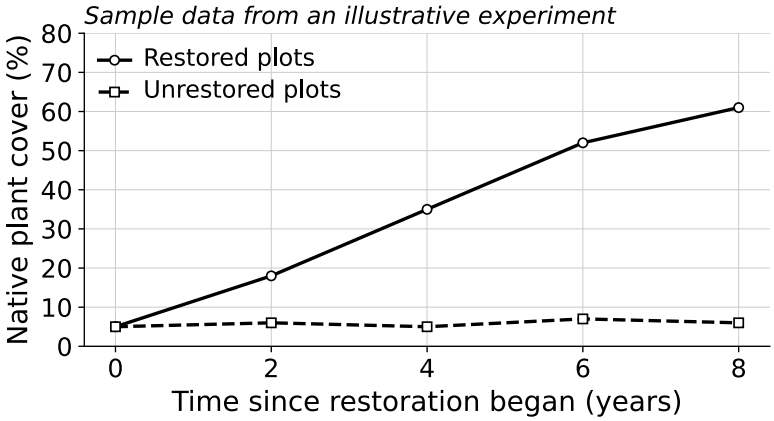
(b) Explain why highway fencing alone is not enough to help wildlife populations.

(a) **Possible criteria: how well it works, its cost, its side effects, and its effects on people. Any two.**

(b) **Fencing reduces collisions but blocks movement, so animals cannot reach other areas and populations can become isolated. Crossing structures let animals pass safely.**

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3. Native plant cover was measured in restored and unrestored plots (sample data).



(a) Calculate the difference in native plant cover between restored and unrestored plots at year 8, in percentage points.

(b) Write a claim, evidence, and reasoning to answer: did the restoration increase native plant cover?

(a) 61 − 6 = **55 percentage points**

(b) **Model answer: Yes, restoration increased native plant cover. At year 8, restored plots had 61% cover and unrestored plots had 6%. The plots started at the same cover of 5%, so the unrestored plots act as a comparison, which suggests that the restoration caused the increase.**

A correct answer must include: a claim that restoration increased cover; values from both groups with units (%); reasoning that the unrestored plots serve as a comparison.

4. A highway section averaged 250 wildlife-vehicle collisions per year before fencing and crossings were added. Collisions then fell by 80%.

(a) Calculate the number of collisions per year after the change. Show your setup.

(b) Explain why scientists keep collecting data after a crossing is built.

(a) 250 × (1 − 0.80) = 250 × 0.20 = **50 collisions per year**

(b) **Data show whether the solution is working and whether it needs to be changed. Scientists can then refine the design.**

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