ANSWER KEY.

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Human Impacts on Biodiversity

Biology | ANSWER KEY

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

1. Name the main threat to biodiversity in each situation.

Situation	Main threat
(a) A wetland is drained and paved for a parking lot	
(b) A snail from another region spreads and eats native plants	
(c) A fish is caught faster than its population can recover	

(a) **Habitat loss** (b) **Invasive species** (c) **Overharvesting**

2. Answer the questions about biodiversity.

(a) What is biodiversity?

(b) Name the three levels at which biodiversity is described.

(c) Explain how fertilizer runoff can harm fish in a lake.

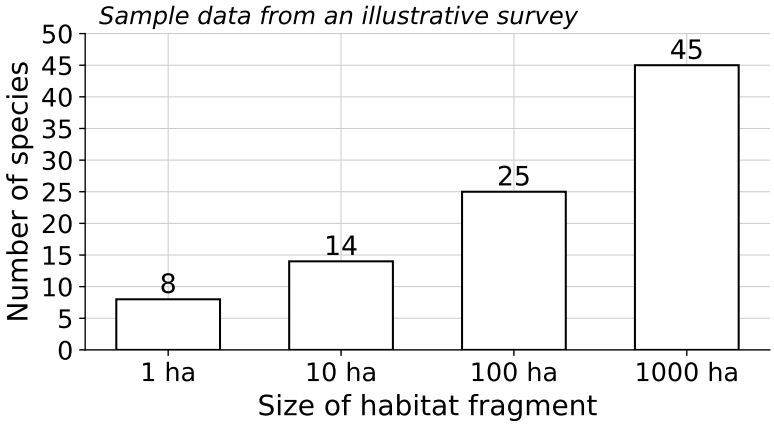
(a) **Biodiversity is the variety of life.**

(b) **Genetic diversity, species diversity, and ecosystem diversity.**

(c) **Extra nutrients can cause algae to grow rapidly. When the algae die and decay, the process can use up oxygen in the water, which may harm fish.**

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3. Species were counted in habitat fragments of different sizes (sample data).



(a) Calculate the percent increase in species from the 10 ha fragment to the 100 ha fragment. Show your setup and round to the nearest tenth.

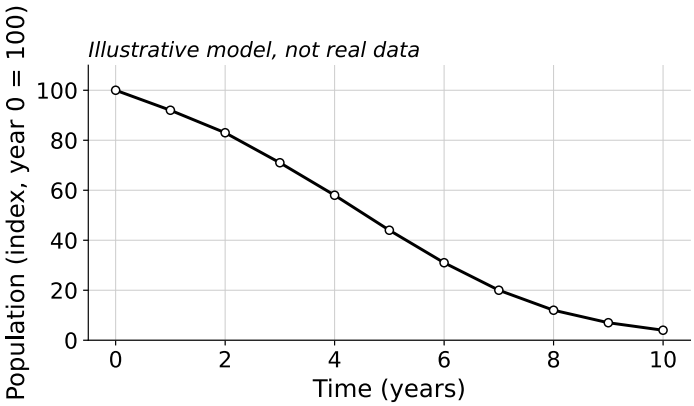
(b) Write a claim, evidence, and reasoning to answer: do larger fragments hold more species?

(a) (25 − 14) ÷ 14 × 100 = 11 ÷ 14 × 100 = **78.6%**

(b) **Model answer: Yes, in these data larger fragments hold more species. The 1 ha fragment had 8 species, and the 1000 ha fragment had 45 species. Larger areas can support more individuals and more kinds of habitat, so more species can persist.**

A correct answer must include: a claim that larger fragments hold more species; values from the graph with units (species, ha); a reason linking area to the number of individuals or kinds of habitat.

4. A fish stock is harvested faster than it can recover (illustrative model).



(a) Calculate the percent decrease in the population from year 0 to year 10. Show your setup.

(b) Suggest one way to slow the decline and explain why it could help.

(a) (100 − 4) ÷ 100 × 100 = 96 ÷ 100 × 100 = **96.0%**

(b) **Possible answer: set a limit on how many fish can be caught. Fewer fish taken per year gives the population time to replace itself.**

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