Name _____ Date _____ Period _____

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Biodiversity and Ecosystem Services

Biology

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

1. Name the level of biodiversity described by each observation. Choose from: genetic, species, or ecosystem diversity.

Observation	Level of biodiversity
(a) A seed bank stores 40 different varieties of one kind of rice.	
(b) A coastal region has salt marsh, sand dunes, and forest.	
(c) A rainforest survey finds 150 species of beetles.	

2. The table shows tree counts in two plots of the same size.

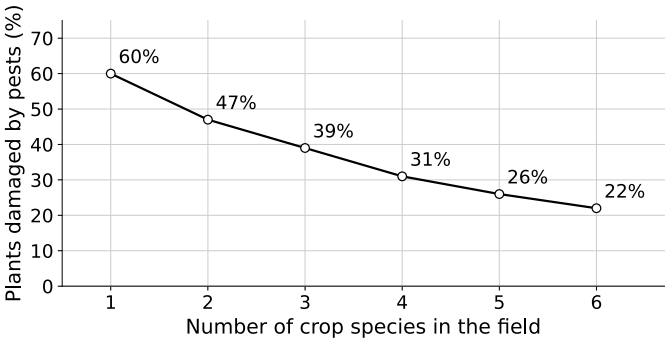
Tree species	Plot A: mixed forest	Plot B: pine plantation
Oak	12	2
Maple	9	0
Hickory	4	0
Beech	5	0
Pine	0	28
Total trees	30	30

(a) Find the species richness of each plot.

(b) Plot B has what percent fewer species than Plot A? Show your work.

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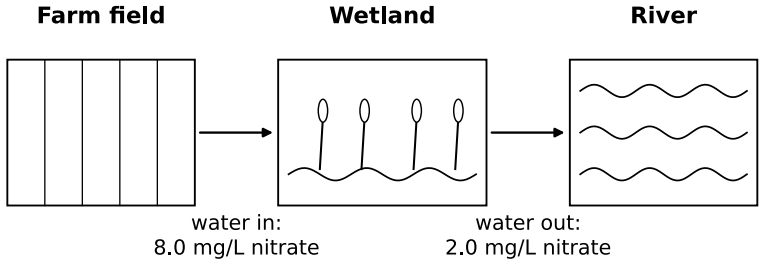
3. Fields with different numbers of crop species were checked for pest damage (sample data).



(a) How many percentage points lower is the damage in the 6-crop field than in the 1-crop field?

(b) Write a claim about crop diversity and pest damage. Support it with data from the graph, and give one possible reason.

4. A wetland lies between a farm field and a river. The drawing shows nitrate in the water going in and coming out (sample data).



(a) What percent of the nitrate is removed by the wetland? Show your setup.

(b) Is this a provisioning, regulating, supporting, or cultural service?

(c) A town drains the wetland to build a parking lot. Predict what happens to the nitrate in the river, and name one way the town might have to make up for the lost service.

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