A4.2 Conservation of biodiversity

What the Cell · DP Biology · worksheet · SL statements A4.2.1–8

Name _____ **Date** _____ **Total** _____ / 40

About 40 minutes, or one section at a time. You will need a calculator. The number of marks shows how many separate points to make.

Section A: Recall

7 marks

1 **State** the three levels of biodiversity. A4.2.1 **[1]**

2 **Distinguish** between richness and evenness. A4.2.1 **[2]**

3 **List** two specific causes of today's biodiversity crisis. A4.2.6 **[2]**

4 **State** the meaning of in situ and ex situ conservation. A4.2.7 **[2]**

Section B: Understanding

13 marks

5 **Explain** why species such as moa were especially at risk when humans arrived. A4.2.3 **[3]**

6 **Outline** two causes of the loss of mixed dipterocarp forest. A4.2.4 **[2]**

7 **Explain** how total species numbers today can be high while there is still a biodiversity crisis. A4.2.2, A4.2.5 **[2]**

8 **Compare and contrast** in situ and ex situ conservation. A4.2.7 **[3]**

In situ	Ex situ

9 **Explain** why the EDGE programme gives priority to evolutionarily distinct species. A4.2.8 **[3]**

Section C: Working with data

14 marks

All data in this section are invented for practice. The patterns are realistic.

10 A4.2.1

Plants were counted in random quadrats in two meadows. $D = N(N - 1) / \Sigma n(n - 1)$

Species	Meadow 1	Meadow 2
Grass	12	45
Clover	12	2
Daisy	12	2
Buttercup	12	1

a **Calculate** Simpson's reciprocal index for meadow 1. **[2]**

b Meadow 2 has an index of 1.2. **Compare** the richness and evenness of the two meadows. **[2]**

c **Suggest** a human activity that could explain the result for meadow 2. **[1]**

d **Explain** why quadrats must be placed at random. **[1]**

11 A4.2.5, A4.2.6

An index of the size of bird populations on farmland in one country was recorded, with 1980 set to 100.

Year	1980	1990	2000	2010	2020
Farmland birds	100	76	61	54	48
Woodland birds	100	98	95	96	94

a **Calculate** the percentage decrease in farmland birds from 1980 to 2020. **[1]**

b **Compare** the trends in the two groups. **[2]**

c **Suggest** two causes of the trend in farmland birds. **[2]**

d **Evaluate** this as evidence of a global biodiversity crisis. **[3]**

Section D: Longer answer

6 marks

12 **Discuss** why several approaches are needed to conserve biodiversity, using named examples. A4.2.7 **[6]**