



QUESTION WORKBOOK

Managing ecosystems sustainably

Ecology, populations and environmental change · Unit B20

OCR A 6.3.2 · Edexcel A 5.22 · Edexcel B 10.4 i, 10.4 iii

14 questions · 49 marks

NAVY SCREEN EDITION

Every question in this book has a code beside its number.
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SECTION A · Short, 1 to 2 marks**A1**

MES-Q15

State what is meant by a sustainable yield, and state what is meant by the maximum sustainable yield.

[2]

SECTION B · Standard, 3 to 5 marks**B1**

MES-Q9

A campaigner argues that the way to get the largest catch from a fish stock, year after year, is to leave the population as large as possible by taking very little from it. Evaluate this claim, using the logistic growth model.

[5]

B2

MES-Q1

Describe how a hazel wood is managed by rotational coppicing, and describe the effect this has on the number of habitats in the wood.

[4]

B3

MES-Q2

Evaluate the use of aquaculture, the farming of fish in cages, as a way of reducing pressure on wild fish stocks. [4]

B4

MES-Q3

A government proposes to cut the quota for a declining fish stock by half. Discuss the arguments for and against the proposal. [4]

B5

MES-Q7

Compare selective felling with clear felling as ways of taking timber from a forest. [4]

B6

MES-Q8

A no-take zone is set up over the spawning ground of a heavily fished stock, and fishing goes on everywhere outside it. Suggest why the catch taken from the water around the zone may rise after several years, and suggest one reason the zone might fail to help. [4]

B7

MES-Q10

A government proposes to ban logging inside a tropical forest reserve that borders several villages whose only cash income comes from timber cut there. Discuss how the reserve might be managed so that the rules are actually followed. [4]

B8

MES-Q4

Explain why the maximum sustainable yield from a fish stock is obtained when the population is held at about half its carrying capacity. [3]

B9 Explain how increasing the mesh size of a fishing net and closing a fishery during the spawning season each help a fish stock to recover. [3]
MES-Q5

B10 Describe pollarding, and describe why it is used instead of coppicing where grazing animals such as deer or cattle have access to the wood. [3]
MES-Q11

B11 Explain two reasons a quota, on its own, may fail to keep a fish stock at a sustainable level. [3]
MES-Q12

B12 Explain how limiting fishing effort, for example by capping the number of days a boat may spend at sea, is intended to protect a fish stock, and explain why this measure can still fail to reduce the catch. [3]
MES-Q13

B13

MES-Q14

A plantation of young trees is left unthinned and grows far more densely than a natural woodland would. Suggest what effect this has on the trees produced, and suggest why the owner should thin the plantation. [3]

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