

THE UNIVERSITY *of York*

**Degree Examination 2007**

**ENVIRONMENT DEPARTMENT**

**BSc in Environmental Science & BSc in Environment, Economics and Ecology**  
**Part 1b**

**APPLIED ECOLOGY AND ENVIRONMENTAL MANAGEMENT**

Time allowed: **one and a half hours**

Answer **ALL** questions

*Pay adequate attention to spelling, punctuation and grammar, so that your answers can be  
readily understood*

1. Give two examples of species that are threatened with extinction by overfishing (2 marks)
2. How does the planktonic dispersal phase of marine species contribute to their high population variability? (4 marks)
3. How does high population variability of fish stocks make it hard for managers to achieve sustainability in fisheries? (3 marks)
4. What is maximum sustainable yield? (2 marks)
5. Why are multispecies fisheries so hard to manage? (6 marks)
6. List two advantages of marine reserves (areas that are protected from fishing) over total allowable catches, as a means of controlling fishing mortality. (3 marks)
7. The Ecosystem Approach described by the Convention on Biological Diversity (CBD) is based on the so-called Malawi Principles. List up to six of these principles (1/2 mark each, total 3 marks)
8. Over the past 50 years, there have been a number of changes to the UK agricultural landscape shaped by a combination of technological, political and disease drivers. Briefly describe three of these drivers and their impact on the landscape (6 marks).
9. Define the concept of Ecosystem Health, list the three dimensions to the Holistic Ecosystem Health Indicator (HEHI) system and provide two example indicators of each kind of dimension for a typical UK rural system (8 marks).
10. Ecological systems provide a number of functions and any that deliver benefits to humans are called ecosystem services. Provide two examples of each of the Regulating, Provisioning and Cultural services provided by the UK rural landscape and state which kinds of habitats (on the UK Biodiversity Action Plan) are most important for each (5 marks)

11. Below is a position statement from a conflict surrounding seal populations and the fishing industry in the UK in the 1980s.

Fisherman: Communities that have fished these waters for generations are now being wiped off the face of the planet by these vicious predators that are now completely out of control.

Government Scientist: Grey seal numbers have recovered over the past 10 years. Their diet comprises mostly small sandeels, with a few larger species.

Compare the language used in these two texts using the techniques of discourse analysis, so that appropriate advice could be given to a policy maker. (5 marks).

12. The Millennium Ecosystem Assessment framework links the following elements: Human Well-Being, Indirect Drivers of Change, and Direct Drivers of Change. Give 2 examples of each of these elements. (3 marks)