

2580002

THE UNIVERSITY *of York*

Degree Examination 2004

ENVIRONMENT DEPARTMENT

MSc in Environmental Economics
MSc in Environmental Economics and Environmental Management

POPULATION AND COMMUNITY ECOLOGY FOR ENVIRONMENTAL
MANAGEMENT

Time allowed: **two hours**

Answer **TWO** questions out of **FOUR**

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

- 1 Managers and policy makers often think of populations, communities and ecosystems as being stable if they do not seem to vary over time. Ecologists, on the other hand, consider other measures and concepts of stability as more appropriate. Discuss these different concepts and critically assess their usefulness for environmental management.
- 2 Ecological systems are extremely complex and their behaviour even more so. In attempting to understand these systems better, ecologists have tried to find ways of reducing this complexity. Describe the different approaches that have been used for (a) the analysis of food webs and (b) for providing summary statistics for environmental managers interested in monitoring.
- 3 What is meant by the term "Keystone species"? How common are such species in ecological systems and what evidence is needed to demonstrate their existence?
- 4 What is meant by inter-specific competition and how is it best demonstrated? Illustrate your answer using the following specific examples: salamanders, barnacles, bedstraws and Paramecium.