

*Ollscoil na hÉireann, Gaillimh*  
*National University of Ireland, Galway*

GX 2262

**Semester One Examinations, 2003/2004**  
**Front Page Template**

Exam Code(s) 2EV1

Exam(s) 2<sup>nd</sup> Environmental Science

Module Code(s) EV202

Module(s) Environmental Management

Paper No. 1  
Repeat Paper Special Paper

External Examiner(s) Dr P. D. Moore

Internal Examiner(s) Dr. M. Gormally

**Instructions:**

Answer **THREE** questions.

Indicate clearly the questions answered on the first page of your answer book.

Duration 2 hrs

No. of Answer books 1

**Requirements:**

Handout

MCQ

Statistical Tables

Graph Paper

Log Graph Paper

Other Material

No. of Pages 2

Department(s)

1. The results of a three-day trapping session for field mice (*Apodemus sylvaticus*) are given below:

Day	Total number captured	Total number marked & released	Number marked
1	22	21	0
2	41	41	15 (Day 1 mark) 0 (Day 2 mark)
3	48	46	15 (Day 2 mark) 1 (Day 1 mark)

Calculate the population size of *A. sylvaticus* for Day 2 using the Bailey Triple Catch and Jolly methods. In your answer, comment on the assumptions that have to be made when estimating population sizes using the above methods.

2. As part of a survey in a woodland nature reserve, describe the field methods you would employ to determine small mammal population sizes. In your answer, describe what is meant by the edge effect and how problems associated with this can be overcome.
3. As an environmental scientist, you have been asked to undertake a vegetation survey of a species-rich grassland. Describe (using graphs) how you would determine the optimum size and number of frame quadrats to be used at the site and where these should be positioned. In your answer, describe the circumstances in which you might use pin quadrats at the site.
4. "Censusing or monitoring is an essential part of all ecological and conservation work".  
Using examples, critically discuss this statement with reference to common errors made in censusing / monitoring studies.
5. (a) Using illustrations, describe the use of pitfall traps, flight interception traps, water traps and emergence traps for sampling invertebrate populations. In your answer, comment on the limitations associated with each trapping method.
- (b) Define what is meant by ecological diversity. Describe (using examples) how diversity can be used to evaluate habitats.