

OLLSCOIL NA hÉIREANN
NATIONAL UNIVERSITY OF IRELAND, GALWAY

SEMESTER I EXAMINATIONS, 2003

Fourth Year (Denominated B.Sc. Degree in Marine Science; Honours)

MR 401: Advanced Topics Paper 1

Prof. M.J. Dring
and the internal examiners

Time allowed: *Three hours.*
Answer *four* questions, at least **ONE** from each section.

Use a **SEPARATE** answer book for each section

SECTION A

1. What would you expect to be the short and long-term effects of a major oil spill hitting the north coast of Galway Bay? Cite examples from previous oil spills to support your arguments.
2. ***EITHER***
What are the essential requirements for eutrophication to occur? Use as examples the Irish and Baltic Seas.

OR
Discuss the analytical chemistry of the components of eutrophication.
3. ***EITHER***
Why are halogenated hydrocarbons considered particularly hazardous in terms of potential marine pollution?

OR
"Trace metals are always present in marine waters; the devil is in the speciation". Discuss.

P.T.O.

(MR401 Continued)

SECTION B

4. Outline the consequences associated with introduced, invasive seaweeds using the examples of *Sargassum muticum* and *Caulerpa taxifolia* recently introduced into Europe.
5. Discuss the implications of seaweed morphology for photosynthesis, growth and survival: how relevant is the form-function model of Littler?
6. Write an essay on nutrient uptake by seaweeds.

SECTION C

7. Describe methods of estimating the abundance of a spawning fish species and comment on the relevance of the recommended Total Allowable Catch.
8. Define the expression 'marine snow'. What is its perceived role in the marine environment?
9. Write a critical appreciation of the interaction between the phenomenon of hypoxia and benthic community structure.