

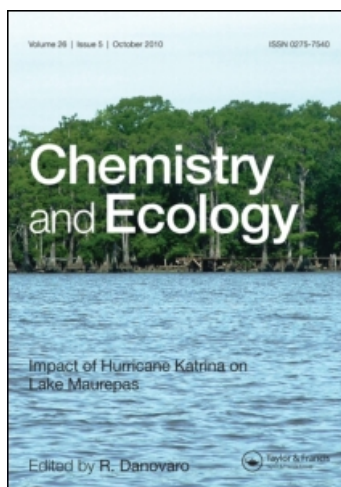
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### A review of: "Toxic Impacts On the Aquatic Environment"

Gwyneth Howells

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## Book Review

*Toxic Impacts on the Aquatic Environment*, edited by J. F. Tapp, J. R. Wharfe and S. M. Hunt, Royal Society of Chemistry, ISBN 0-85404-781-6. Price £49.50, 1996. Pages 295, index, figures and tables.

This book relates to a conference held in Loughborough University in April 1996, with authorities from United Kingdom, Europe and United States; however, most of the submitted papers are from United Kingdom, with some European contributions in the posters abstracts. Many aspects of coming to terms with the large number of discharges of which many are toxic, but much more was given to consider the additive and synergistic discharges of mixtures, with an increased biological and ecotoxicological measures to measure their impact on release. Many aspects were considered, including the current legislation in United Kingdom (ECOs) and Europe (limited at discharge), measures of environmental damage and development of control procedures, new methods for quality control, and a number of case studies.

In 1 April 1996, United Kingdom was the first country (aside from the United States) which introduced the Integrated Pollution Control (IPC) to atmospheric pollution and to terrestrial waste control. This was preceded over the last 100 years or so by control of public health and the pollution by industrial effluents in water discharges—current through to the year of 1951. In spite of its intentions, only little could be said of how rivers and discharges to the sea could be achieved. This practice related the consent conditions to volume, nature and use of the receiving waters, but then only in response to the 1980s activity to the European Community. The use of the new Environmental Agency has brought many changes, and still some are to come for various toxic wastes for the IPC policy. One problem remains that the NRA, is responsible for operational matters, land drainage and coastal defence and water resource management—a continuity of the poacher/gamekeeper syndrome. The European Community has fixed

its sites on the "Fixed Limit" purposes, whereas in UK the EQO is the guideline for dangerous or toxic substances. This is to limit substances according to the precautionary principle and this is defined by their limit of detection, rather than to the charge made against toxic agents. This conference establishes the case for the UK effort in establishing what happens and how will it affect the biota.

The papers that follow in the book explain the nature of many case studies where the problems arise from toxic levels, on examples from mostly UK sources. However there are a few papers in which US activities, and a few from northern countries of Europe are used. In a final chapter (labelled "What next"), the line is taken that rapid methods of toxicity testing are needed. This line (the triad approach) will involve chemical assessment, applied to defined discharges with gaps in all contaminants, biological assessment where not all impacts can be defined, and environmental impacts where incomplete data for a causative agent may not be applied and where endpoints may not be predictive of ecosystem approach. It will be that environmental discharges to show that toxic wastes discharges which result in non-compliance with control measures. It follows that two subjects are needed—portable and continuous monitors, and a battery of tests of water quality and sediments.

There was much to be said and demonstrated at the Loughborough meeting, but much of the evidence provides case studies, and some of discharges may lead to the environmental damage problem. It is an interesting story, that I think it will require much more effort before this might become appropriate in United Kingdom circles. In the meantime the exercise was helpful in a limited way and some libraries may be able to postpone satisfaction before EQOs are given a chance to get lost!

In the meantime, EQOs are still a method of choice in United Kingdom waters.

Gwyneth Howells

Thursday, 20 March 1997