Water Pollution VIII

Modelling, Monitoring and Management

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ON WATER POLLUTION:
MODELLING, MONITORING AND MANAGEMENT

Water Pollution VIII

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WIT Transactions on Ecology and the Environment

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Published by

WIT Press
Ashurst Lodge, Ashurst, Southampton, SO40 7AA, UK
Tel: 44 (0) 238 029 3223; Fax: 44 (0) 238 029 2853
E-Mail: witpress@witpress.com
http://www.witpress.com

For USA, Canada and Mexico

Computational Mechanics Inc
25 Bridge Street, Billerica, MA 01821, USA
Tel: 978 667 5841; Fax: 978 667 7582
E-Mail: infousa@witpress.com
http://www.witpress.com

British Library Cataloguing-in-Publication Data

A Catalogue record for this book is available
from the British Library

ISBN: 1-84564-042-X
ISSN: 1746-448X(print)
ISSN: 1743-3541 (online)

The texts of the papers in this volume were set individually by the authors or under their supervision. Only minor corrections to the text may have been carried out by the publisher.

Printed in Great Britain by Cambridge Printing.

Preface

This volume contains the edited versions of selected papers presented at the Eighth International Conference on Modelling, Monitoring and Management of Water Pollution, held in Bologna, Italy, in September 2006.

The book addresses recent advances in a wide range of issues including the physical processes of mixing and dilution, chemical and biological processes, mathematical modelling, data acquisition and measurement.

Consisting of over 70% of the Earth's surface, water is undoubtedly the most precious natural resource that exists on our planet. Without this invaluable hydrogen-oxygen compound, life on Earth would be non-existent: it is essential for everything on our planet to grow and prosper. Although we as humans recognize this fact, we disregard it by polluting our rivers, lakes, and oceans.

The pollution of rivers and streams with chemical contaminants has become one of the most crucial environmental problems of the 21st century. Waterborne chemical pollution entering rivers and streams causes tremendous destruction.

Raw sewage, garbage, and oil spills have begun to overwhelm the diluting capabilities of the oceans, and most coastal waters are now polluted. Beaches around the world are closed regularly, often because of high amounts of bacteria from sewage disposal, and marine wildlife is beginning to suffer.

Since World War II and the birth of the "chemical age", water quality has been heavily impacted worldwide by industrial and agricultural chemicals. Eutrophication of surface waters from human and agricultural wastes and nitrification of groundwater from agricultural practices has greatly affected large parts of the world.

Consequently, we are slowly but surely harming our planet to the point that organisms are dying at a very alarming rate. In addition to innocent organisms dying off, our drinking water has been greatly affected, as well as our ability to use water for recreational purposes. In order to combat water pollution, we must understand these problems and become part of the solution.

It is clear that the problems associated with water pollution have the potential to seriously disrupt life on our planet.

Ultimately, it is up to us to be informed, responsible and involved when it comes to the problems we face with our water. We must become familiar with our local water resources and learn about alternative ways to dispose of harmful household waste so that it does not end up in sewage treatment plants that cannot handle them, or landfill sites that are not designed to receive hazardous materials. In our gardens,

we should determine whether additional nutrients are needed before applying fertilizers, and look for alternatives where fertilizers may run off into surface waters.

Over the coming years, awareness and education will continue to be the two most important ways to prevent water pollution. If these measures are not taken and water pollution continues, life on earth will seriously suffer.

All of us must adopt plans for sustainable development rather than economic expansion. Conservation strategies must become more widely accepted, and people must learn that energy use can be dramatically reduced without comfort being sacrificed.

The editors are grateful to all authors for their excellent contributions, as well as to the members of the International Scientific Advisory Committee for their help in reviewing the abstracts and final papers thus ensuring the quality of the book.

The Editors
Bologna, 2006

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