

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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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

Contents

Section 1: Coastal areas and seas

Dynamics of lagoon ecosystems <i>F. Cioffi & G. Cannata</i>	3
Contribution to the preservation of healthy coastal ecosystems <i>J. S. Antunes do Carmo, J. L. S. Pinho & J. M. P. Vieira</i>	15
“Health Examination” – a semi-enclosed coastal environment: a new concept for marine environmental monitoring <i>M. Okawa, T. Takahashi, T. Kazama & K. Nakata</i>	25
The improvement of the environment in the sea by the creation of tidal flats and shallow waters utilizing dredged sand <i>T. Kazama, K. Nakata, Y. Tanabe, R. Ushijima, M. Yoshimi, I. Oshima & T. Nagakura</i>	35
Heavy metals (Cd, Cu, Pb and Zn) in two species of limpets (<i>Patella rustica</i> and <i>Patella candei crenata</i>) in the Canary Islands, Spain <i>C. Collado, R. Ramirez, O. Bergasa, J. J. Hernández-Brito, M. D. Gelado-Caballero & R. J. Haroun</i>	45
General trends in the soft bottom environment of the Ekofisk region, Norwegian sector <i>S. M. Bakke & S. A. Nøland</i>	55

Section 2: Lakes and rivers

Estimation of user benefit for river water quality: Indian case study <i>S. B. Imandoust</i>	67
---	----

Wastewater discharge impact on an important river of the Lerma-Chapala watershed, Mexico <i>C. Fall, A. P. Hinojosa, M. C. M. Jiménez & M. C. L Carreño</i>	79
A study of anthropogenic, marine and other influences upon water chemistry in Hong Kong rivers <i>G. W. S. Wong & M. R. Peart</i>	91
Study on hydro-environment stabilization of artificial lakes in karst areas <i>Y. Y. Wu, P. P. Li, Y. L. Zhu, J. Z. Wang & C. Q. Liu</i>	101
Flow rate and hydrochemistry in areas of sand mining activities <i>D. M. Bonotto & E. G. Oliveira</i>	109
Speciation of trace elements in sediments from Dongting Lake, central China <i>Z. G. Yao, Z. Y. Bao, P. Gao, J. L. Zhang, Y. P. Guo, Z. J. Hu & B. L. Li</i>	119
The effect of phosphorus on nitrogen retention in lakes <i>T. Frisk, Ä. Bilaletdin & H. Kaipainen</i>	129
Towards a good surface water state in the Flemish Region of Belgium with the Environmental Costing Model <i>S. Broekx, E. Meynaerts, P. Vercaemst, S. Ochelen & A. Beckers</i>	139
Evaluating alternative river management options in the tidal Ouse, UK <i>T. Wang</i>	147
An assessment of water withdrawal effect on water quality of the downstream river at the Mamloo Dam site using the QUAL2E model <i>A. Torabian, S. H. Hashemi & A. A. Ghadimkhani</i>	157
Hydrological and water quality modeling in the Ontario River basins: comparison of model results <i>R. P. Rudra, B. Gharabaghi, S. Gebremeskel, S. Das & H. Bai</i>	165

Section 3: Groundwater and aquifer issues

Complex hydrogeological modeling of multifunctional artificial recharge options of the Great-Forest Park in Debrecen, Hungary <i>P. Szűcs & T. Madarász</i>	177
--	-----

Impact of ground water level oscillations on lead concentration in the Jaworzno area <i>M. Gwozdziwicz, A. Bauerek & Z. Bzowski</i>	185
An improvement of Cr ⁺⁶ removal by the reduction to Cr ⁺³ in Birjand ground water treatment <i>R. Heydarzadeh, A. A. Ghadimkhani & A. Torabian</i>	195
Bio-translation of aniline in riverbank filtration under sulfate-reducing conditions <i>Y. Wu, L. Hui, X. Li, H. Wang & R. Zeng</i>	203
Sorption phenomena of nitroaromatic compounds in geochemical variable soils represented on the basis of column tests under in-situ conditions <i>F. Jaenig</i>	213
Comparison with GW predictive modelling, pilot tests and design of an injection hydraulic barrier <i>A. Amantia, P. Bendotti, G. Donini & M. Molinari</i>	223
Risk of well water pollution from the surface of a recharge area <i>J. Krivic</i>	233

Section 4: Oil spills

Numerical study of an oil spill containment boom by the finite-element method <i>F. Muttin & S. Nouchi</i>	245
Quantitative techniques to discriminate petroleum oils using LED-induced fluorescence <i>V. Rostampour & M. J. Lynch</i>	255
Robust optimisation of coastal environmental impact from oil spills using a flexible evolution agent and finding the optimal course of the damaged tanker <i>B. González, B. Galván, E. Benítez, I. Martín, J. P. Ramos, H. Carmona & G. Winter</i>	263
Removal of chloride from harbor oily sludge by electrostatic desalting <i>Y.-J. Huang, C.-H. Tu & Y. C. Huang</i>	273

The use of cotton grass as oil sorbent in marine environmental protection – preliminary results from experiments <i>J. Ikävalko, S. Suni, K. Koskinen, A. Aalto, J. Jäänheimo & M. Romantschuk</i>	283
---	-----

Device for simultaneous recovery and containment of spilled oil from the seawater surface <i>J. Rodríguez, A. Ramírez & M. Martínez</i>	291
--	-----

Section 5: Agricultural pollution

Toxicity determination of various phenoxyalkanoic acid herbicides using cress seed in phosphate contaminated aqueous media <i>O. O. Nalcaci, S. Sirin & B. Ovez</i>	301
--	-----

Determining transport parameters for unsaturated porous media in flow-tank experiments using image analysis <i>K. Inoue, N. Setsune, F. Suzuki & T. Tanaka</i>	309
---	-----

Section 6: Environmental monitoring and sensing

Comparing biomarker responses with risk estimates used for decision analysis <i>H. Rye, H. Berland & S. Sanni</i>	323
--	-----

Marine environment monitoring in coastal Sicilian waters <i>G. Zappalà, G. Caruso, F. Azzaro & E. Crisafi</i>	337
--	-----

Remote sensing of marine oil spills from airborne platforms using multi-sensor systems <i>N. Robbe & T. Hengstermann</i>	347
---	-----

Design of a National Radioactivity Monitoring Programme (NRMP) to monitor surface water resources in South Africa <i>I. Sekoko, A. Kühn, P. Kempster, B. Madikizela, H. van Niekerk, M. van Veelen & J. Slabbert</i>	357
---	-----

Section 7: Experimental and laboratory work

Using fluorescence for a full spectral analysis of dissolved and gaseous oxygen within a sand bed <i>A. Wanko, N. Forquet, R. Mose & A.-G. Sadowski</i>	369
--	-----

The effect of implemented pulsed electric field (PEF) treatment on the dehydrogenase activity of activated sludge <i>U. Koners, W. Schmidt, M. Löffler, V. Heinz & D. Knorr</i>	379
Transport parameter estimation in homogeneous and two-layered porous media using two different methods: genetic algorithm and image analysis <i>K. Inoue, I. Masaki, Y. Shimada & T. Tanaka</i>	389
Detection and analysis of volatile organic chemicals in waste water using an electronic nose <i>E. J. Staples & S. Viswanathan</i>	401
Use of pH, contact time, chlorine dose and temperature on the formation of trihalomethane and some predictive models <i>I. Garcia & L. Moreno</i>	411
Experimental analysis of first foul flush in an industrial area <i>S. Artina, A. Bolognesi, T. Liserra, M. Maglionario & G. Salmoiraghi</i>	423

Section 8: Mathematical and physical modelling

Ecosystem and assimilative capacity of rivers with control structures <i>E. Imam & S. El Baradei</i>	435
Modeling of thermal pollution in the northern coastal area of the Persian Gulf and its economical and environmental assessment <i>M. Abbaspour, A. H. Javid, P. Moghimi & K. Kayhan</i>	445
Analysis of the convective drying of residual sludge: from the experiment to the simulation <i>H. Amadou, C. Beck, R. Mose, C. Vasile, A.-G. Sadowski & J.-B. Poulet</i>	455
Variable time stepping in parallel particle models for transport problems in shallow waters <i>W. M. Charles, E. van den Berg, H. X. Lin & A. W. Heemink</i>	465

Section 9: Wastewater treatment

Evaluation of a novel membrane bioreactor system for water reuse applications in urban environments <i>R. R. Sharp, G. Heslin & M. Dolphin</i>	479
---	-----

Design of a novel cellulose-based adsorbent for use in heavy metal recovery from aqueous waste streams <i>D. W. O'Connell, C. Birkinshaw & T. F. O'Dwyer</i>	489
Industrial implementation of a biosorption system with GAC <i>D. Kliaugaitė, I. Valūnas, I. Urniežaitė & V. Račys</i>	499
Carrier technology/humic additives to upgrade biological water treatment <i>V. Jirku, J. Masak & A. Cejkova</i>	509
Selective adsorption of Cu(II) from synthetic wastewater using melamine-formaldehyde-NTA resin <i>P. J. Hall, M. J. Heslop & A. Baraka</i>	519
Evaluation of physicochemical parameters influencing bulking episodes in a municipal wastewater treatment plant <i>J. Bayo, J. M. Angosto, J. Serrano-Aniorte, J. A. Cascales-Pujalte, C. Fernández-López & J. López-Castellanos</i>	531
Advanced oxidation of photographic processing effluents on novel heterogeneous fibrous catalyst <i>V. V. Ishtchenko, K. D. Huddersman & Z. Yang</i>	541
Linear alkybenzene sulfonate and alkyl sulfate biodegradation in laboratory and field activated sludge systems <i>T. G. Ellis, X. Huang & S. K. Kaiser</i>	551
High concentration of ozone application by the DAF (Dissolved Air Flotation) system to treat livestock wastewater <i>B. H. Lee & W. C. Song</i>	561
Evaluation of anaerobic sludge activity in wastewater treatment plants in Nicaragua <i>L. Korsak & L. Moreno</i>	571
Phylogenetic diversity of procaryotae and their contribution to excess sludge demineralization in a gravel contact oxidation reactor <i>S. Lin, Y. Jin, L. Fu & C. Quan</i>	581
Multiple plunging jet aeration system and parameter modelling by neural network and support vector machines <i>S. Deswal, D. V. S. Verma & M. Pal</i>	595
Feasibility study on the application of fly ash as a barrier material in containment systems <i>D.-I. Myoung, G.-H. Lee, S.-H. Lee, J.-B. Park & H.-S. Kim</i>	605

Section 10: Pollution prevention

A method for a precautionary assessment of aquifer vulnerability to pollution <i>E. Cameron, L. Garavaglia & G. F. Peloso</i>	615
Physical, chemical and microbiological characteristics of stored greywater from unsewered urban Dakar, Senegal <i>O. Sall & Y. Takahashi</i>	627
Three critical factors and their influence on the spread of microbiological waterborne diseases in sub Saharan countries (with special emphasis on cholera) <i>N. L. Musekene, M. Nefumbada, P. Kempster, A. Kühn & H. Van Niekerk</i>	639
Author index	649