

**Environmental and Pollution Science, I. Pepper, C.P. Gerba, M.L. Brusseau (Eds.), 2nd ed. Elsevier/Academic Press, Burlington, MA (2006). 552 pp., US\$ 89.95, 8 1/2 × 11 format, ISBN: 0-12-551503-0**

This book, which is a successor to a 1996 text entitled *Pollution Science*, is intended to be used by science-based junior/senior-level undergraduate students having such diverse backgrounds as environmental science, hydrology, earth science and environmental engineering.

*Environmental and Pollution Science* has 32 chapters published under six major headings. Given the overwhelming amount of material in the book, a comprehensive review of each chapter is not feasible. Therefore, I am simply going to list the chapter titles to illustrate the wide and comprehensive coverage of the topic:

Part 1: Processes Affecting Fate and Transport of Contaminants

1. The extent of global pollution.
2. Physical–chemical characteristics of soils and the subsurface.
3. Physical–chemical characteristics of waters.
4. Physical–chemical characteristics of the atmosphere.
5. Biotic characteristics of the environment.
6. Physical processes affecting contaminant transport and fate.
7. Chemical processes affecting contaminant transport and fate.
8. Biological processes affecting contaminant transport and fate.

Part 2: Monitoring, Assessment, and Regulation of Environmental Pollution

9. Physical contaminants.
10. Chemical contaminants.
11. Microbial contaminants.
12. The role of environmental monitoring in pollution science.
13. Environmental toxicology.
14. Risk assessment.
15. Environmental laws and regulations.

Part 3: Land and Water Pollution Mitigation

16. Soil and land pollution.
17. Subsurface pollution.
18. Surface water pollution.
19. Soil and groundwater remediation.
20. Ecosystem restoration and land reclamation.

Part 4: Atmospheric Pollution

21. Sensory pollutants, electromagnetic fields and radiofrequency radiation.
22. Indoor air quality.
23. Atmospheric pollution.
24. Global change.

Part 5: Waste and Water Treatment and Management

25. Industrial and municipal solid waste treatment and disposal.
26. Municipal wastewater treatment.

27. Land application of biosolids and animal wastes.
28. Drinking water treatment and water security.

Part 6: Emerging Issues in Pollution Science

29. Genetically engineered crops and microbes.
30. Antibiotic-resistant bacteria and gene transfer.
31. Pharmaceuticals and endocrine disruptors.
32. Epilogue: is the future of pollution history?

As an environmental engineer and one who has taught air, water and hazardous waste courses, I was tempted to attempt to try to find lapses in the coverage of these topics. Not surprisingly, I did find some topics not as well covered as I would have liked for use in an engineering course. But given the focus of the text, i.e., environmental science majors, these omissions are not a major detriment. For example, indoor air quality, atmospheric pollution and global change were covered well, but industrial air pollution control was not. Conversely, water pollution control and water treatment (both dealing with municipalities) were thoroughly discussed. I was surprised, but delighted, to see coverage of land application of biosolids (a topic of personal research interest). The discussion was very well done.

Clearly, the editors faced a space dilemma and had to choose topics most relevant to their prospective audience which was not mainly engineering students.

I was amazed at the liberal, or should I say copious, use of color photographs and diagrams in the book. This material was somewhere between excellent and superb. Other material was found in “information boxes” and “case study boxes.” Questions and problems were found at the end of each chapter along with short reference lists.

This is one of the most enjoyable and very reasonably priced books that I have reviewed recently. Its coverage of the topic, in the main, is excellent. I am sure it will be widely adopted by its intended audience.

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**Proceedings of the 29th Arctic and Marine Oilspill Program (AMOP) Technical Seminar, Two Volumes, Emergencies Science and Technology Division, Science and Technology Branch, Environmental Technology Centre, Ottawa, Ontario, Canada (2006). 1129 pp**

Annually, Dr. Merv Fingas (an editor of this journal) sends me the proceedings of Environment Canada’s AMOP technical

seminar. This year I received the normal two volumes which contain the papers from the 29th AMOP seminar which was held in Vancouver, British Columbia in June 2006.

The papers span a wide range of topics from oil spill research to the impact of hurricanes and counter-terrorism. The authors represent 10 countries, several universities and numerous government agencies, prominent among which is Environment Canada. This agency is exceedingly well represented by Fin-gas, who is named as an author of no fewer than 17 papers.

Listed below are the session titles and the number of papers in each:

1. Physical and chemical properties and behaviour of spilled oil (6).
2. Containment and recovery (2).
3. Activity updates and contingency planning (12).
4. Phytoremediation of inorganics and radionuclides (2).
5. Bio-solutions to site remediation, restoration and rehabilitation (2).
6. Phytoremediation of petroleum hydrocarbons (1).
7. Technical seminar on chemical spills (17).
8. Oil spill treating agents (4).
9. Spill modelling (4).
10. Detection, tracking and remote sensing (4).
11. Special session—hurricanes (3).
12. Recent spill experiences (2).
13. Poster presentations (5).

As always, the papers were interesting and well written, covering an extremely wide range of topics important to the oil and hazardous material spill scenarios. Environment Canada is to be congratulated again for hosting this seminar and for an extremely timely publication of the presented papers.

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**Biological Monitoring of Rivers: Applications and Perspectives, G. Ziglio, M. Siligardi, G. Flaim (Eds.). John Wiley & Sons, Ltd., Chichester, England (2006). 485 pp., US\$ 195.00, ISBN: 0-470-86376-5**

This book on “Biological Monitoring of Rivers: Applications and Perspectives” is the fifth in Wiley’s Water Quality Measurements series. This series is intended to “. . . ensure a wide coverage of issues related to water quality and measurements,

. . . and the outcome of recent scientific advances. In addition, other aspects related to quality control tools . . . and the monitoring of various types of waters . . . will also be considered”. It “. . . has been written by leading scientific experts in river monitoring and offers the reader an updated and integrated view of river ecology, the application of biotic indices using the more common biological indicators and the interpretation and the future development of river monitoring in different parts of the world”.

This book evolved from a 1998 workshop held in Italy. The objectives of the meeting were “. . . the study of the aquatic environment in a comprehensive way and to promote the use of biotic methods in evaluating the quality of running waters”.

There are four major sections that contain a total of 23 papers almost equally divided among the sections. These sections and their contents are described below.

The River Environment is the first section. Papers review the role of flood plains in river ecosystems, describe instream and bankside habitat in relation to the hierarchical structure of rivers, water courses’ hydrodynamics, riverine fish assemblages, aquatic macroinvertebrates, and macrophytes and algae in running waters.

Section 2 is the longest in the book. It contains seven papers dealing with Biological Monitoring of Rivers which, the first author notes, is over 100 years old. This section has contributions that discuss “. . . the monitoring and assessment methods based on macroinvertebrates, fish, algae and macrophytes. In addition, it covers the organization of biological monitoring with a focus on the EU and North America”.

Biological monitoring is discussed in five papers in Section 3. Considered are: alpine rivers, North European rivers, Mediterranean and running waters in Eastern and Central Europe as well as bioassessment in North America.

The final section has five papers in a section entitled “New Tools and Strategies for River Ecology Evaluation”. The authors discuss “. . . decision making on what constitutes a significant environmental change; predictive modelling approaches; evaluating fluvial functioning, [and] planning the integration of urban and ecological processes . . .”. The chapter concludes with a paper entitled “Beyond Biological Monitoring: An Integrated Approach”.

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