
Environmental Toxicology and Risk Assessment

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Thomas W. La Point,
Fred T. Price, and
Edward E. Little, editors

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*Thomas W. La Point, Fred T. Price, and
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The quality of the papers in this publication reflects not only the obvious efforts of the authors and the technical editor(s), but also the work of these peer reviewers. The ASTM Committee on Publications acknowledges with appreciation their dedication and contribution to time and effort on behalf of ASTM.

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Foreword

This publication, *Environmental Toxicology and Risk Assessment: Fourth Volume*, contains papers presented at Fourth Symposium on Environmental Toxicology and Risk Assessment: Transboundary Issues in Pollution—Air, Surface, and Groundwater held 11–13 April 1994 in Quebec, Canada. The symposium was sponsored by ASTM Committee E-47 on Biological Effects and Environmental Fate. Thomas W. La Point of Clemson University in Pendleton, SC, Fred T. Price of MITRE Corp. in Brooks Air Force Base, TX, and Edward E. Little of NFCRC in Columbia, MO presided as symposium chairmen and as the editors of the resulting publication.

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Overview

The Fourth Symposium on Environmental Toxicology and Risk Assessment: Transboundary Issues in Pollution—Air, Surface, and Groundwater was held on 11–13 April 1994 in Montreal, Quebec, Canada. The symposium was sponsored by ASTM Committee E-47 on Biological Effects and Environmental Fate. The symposium was made up of twelve sessions including the following topics:

- (1) Plenary Session
- (2) Laboratory and Field Estimation of Exposure and Effects
- (3) Risk Assessment and Human Health
- (4) Wetlands
- (5) Significance of MFO Induction
- (6) Aquatic Toxicology
- (7) Ecological Risk Assessment
- (8) Reception with Posters
- (9) International Approaches to Sediment Toxicity Assessment (Part I)
- (10) Bioindicators and Risk
- (11) International Approaches to Sediment Toxicity Assessment (Part II)
- (12) Behavior

This publication is comprised of 15 papers presented at the meeting and then peer-reviewed. Papers from the Plenary Session are those by Medina who gives an overview of transboundary pollution issues along the Mexico-U.S. border and Walker who presents a description of the Toxic Substances Control Act (TSCA) Interagency Testing Committee (ITC). Following are papers on laboratory and field estimation of exposure effects by Greenberg et al., Commons et al., Fort et al., and Kapustka.

Under the topic of Risk Assessment and Human Health are papers by Berger et al. on generic industrial cleanup criteria in the state of Michigan and Kangas et al. on generic human health risk-based criteria in Canada and the United States. The paper by Kangas et al. contains two case studies. The ninth paper in the publication by Zacharewski et al. is on the induction of hepatic and extrahepatic P450 A1 isozymes in fish and mammals used as a biomarker for hydrocarbon and oxidant pollutants. The topic of Aquatic Toxicology is represented by Quan who presents a methodology to identify safer chemical products. Nielsen et al. follow with a strategy for developing remediation target concentrations based on human exposure duration considerations. The methodology described has received acceptance by the U.S. Environmental Protection Agency (USEPA). Little and DeLonay then report on measures of fish behavior as indicators of sublethal toxicosis during standard toxicity tests.

An international approach to sediment toxicity assessment is represented by Stephenson et al. on the current status of Environment Canada's Guidance on control of test precision using a spiked sediment toxicity test. The last two papers are from the session on Behavior by Steele et al. and Little et al. Steele et al. report on perspectives in avoidance-preference bioassays. A comparative approach is used in examining results of avoidance-preference bioassays with zebrafish in two different apparatuses. Little et al. report on behavioral

avoidance as evidence of injury to fishery resources. Laboratory avoidance tests were performed at two testing facilities. The similar avoidance responses observed at the two laboratories demonstrated the reproducibility of avoidance measures.

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