Landscape Ecology and Wildlife Habitat Evaluation:

CRITICAL INFORMATION for Ecological Risk Assessment, Land-Use Management Activities, and Biodiversity Enhancement Practices

STP 1458

Editors:
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Matthew Luxon, Hector Galbraith

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Standards Worldwide

STP 1458

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ASTM Stock Number: STP1458

ASTM International
100 Barr Harbor Drive
PO Box C700
West Conshohocken, PA 19428-2959

Printed in the U.S.A.

Library of Congress Cataloging-in-Publication Data

Landscape ecology and wildlife habitat evaluation : critical information for ecological risk assessment, land-use management activities, and biodiversity enhancement/ Lawrence Kapustka... [et al.].
p. cm. — (STP ; 1458)
Selected papers presented at the symposium "Landscape ecology and wildlife habitat evaluation" held in Kansas City, Missouri, on 7–9 April 2003.
Includes bibliographical references and index.
ISBN (invalid) 080313476
1. Ecological risk assessment—Congresses. 2. Land use—Environmental aspects—Congresses. 3. Habitat (Ecology)—Congresses. 4. Landscape ecology—Congresses. I. Kapustka, Lawrence. II. ASTM special technical publication ; 1458.
QH541.15.R57L36 2004
333.95'14—dc22 2004049022

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Printed in Bridgeport, NJ
June 2004

Foreword

This publication, *Landscape Ecology and Wildlife Habitat Evaluation: Critical Information for Ecological Risk Assessment, Land-Use Management Activities, and Biodiversity Enhancement,* contains selected papers presented at the symposium of the same name held in Kansas City, Missouri, on 7–9 April 2003. The symposium was sponsored by Committee E-47 on Biological Effects and Environmental Fate. The symposium chairmen and co-editors were Lawrence Kapustka, Hector Galbraith, Matthew Luxon, and Gregory Biddinger.

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Overview

This book contains a collection of papers that were derived from papers presented at a symposium *on Landscape Ecology and Wildlife Habitat Evaluation: Critical Information for Ecological Risk Assessment, Land-Use Management Activities, and Biodiversity Enhancement Practices* that was held 7–9 April 2003 in Kansas City, Missouri. The purpose of the symposium was to bring together scientists with diverse interests in landscape ecology, ecological risk assessment, and environmental management. It was designed to explore contemporary knowledge of theoretical and applied ecology, especially embodied in landscape ecology and population dynamics, especially as they relate to characterizing environmental risks to wildlife and requirements of environmental managers addressing current situations and predicting consequences of actions.

Land-use patterns have been described as the most critical aspect affecting wildlife populations and regional biodiversity. Environmental contamination by chemicals often ranks fairly low in terms of factors limiting wildlife populations. Regulatory and legislative efforts have begun to promote "brownfield development" as an alternative to expansion into uncontaminated areas and with less stringent cleanup standards. Indeed, until recently, many areas which have low to moderate levels of chemical contamination were nevertheless subjected to intrusive remediation efforts; the consequence being substantial destruction of existing wildlife habitat and low potential for enhancing better quality habitat at the affected site. Nevertheless, current practices in Ecological Risk Assessment generally do a poor job of considering biological and physical factors as most focus entirely or nearly so on chemical effects. Therefore, the essential tool used to characterize sites does poorly in weighing the merits of alternative remediation options.

The opening session of the symposium provided three perspectives that drew upon the applied discipline of landscape ecology, approaches used to characterize wildlife habitat, and challenges of environmental management of biological resources from a global corporate perspective. The series of papers that followed, explored theoretical aspects of landscape ecology, population dynamics affected by landscape conditions, and tools and approaches in various stages of development that can be used in assessing environmental risks over different temporal and spatial scales. Finally, several presentations covered real-world applications of different tools and approaches.

The symposium was sponsored by the ASTM Committee E47 on Biological Effects and Environmental Fate. Financial assistance was provided by the American Chemistry Council and the U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) Health Effects Research Program. The Subcommittee E47.02 on Terrestrial Assessment and Toxicology anticipates development of two or more Standard Guides covering materials covered in this symposium.

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ISBN # 0-8031-3476-2
Stock #: STP1458

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