

# Landscape Ecology

## and Wildlife Habitat Evaluation:

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

**STP 1458**

Editors:

Lawrence Kapustka, Gregory Biddinger,  
Matthew Luxon, Hector Galbraith



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***Landscape Ecology and Wildlife  
Habitat Evaluation: Critical  
Information for Ecological Risk  
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Enhancement***

*Lawrence Kapustka, Hector Galbraith, Matthew Luxon, and  
Gregory Biddinger, editors*

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## Foreword

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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.

# Contents

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OVERVIEW	vii
----------	-----

## SESSION I

<b>Selecting a Suite of Ecological Indicators for Resource Management—</b> VIRGINIA H. DALE, PATRICK J. MULHOLLAND, LISA M. OLSEN, JACK W. FEMINELLA, KELLY O. MALONEY, DAVID C. WHITE, AARON PEACOCK, AND THOMAS FOSTER	3
--	---

<b>Integrating Mineral Development and Biodiversity Conservation into Regional Land-Use Planning—</b> DAVID G. RICHARDS	18
---	----

## SESSION II

<b>Estimating Functional Connectivity of Wildlife Habitat and Its Relevance to Ecological Risk Assessment—</b> ALAN R. JOHNSON, CRAIG R. ALLEN, AND KRISTI A. N. SIMPSON	41
---	----

<b>Hierarchical Scales in Landscape Responses by Forest Birds—</b> GERALD J. NIEMI, JOANN M. HANOWSKI, NICK DANZ, ROBERT HOWE, MALCOLM JONES, JAMES LIND, AND DAVID M. MLADENOFF	56
--	----

<b>Type, Scale, and Adaptive Narrative: Keeping Models of Salmon, Toxicology and Risk Alive to the World—</b> RONALD J. MCCORMICK, AMANDA J. ZELLMER, AND TIMOTHY F. H. ALLEN	69
--	----

<b>Population Dynamics in Spatially and Temporally Variable Habitats—</b> MARK C. ANDERSEN	84
---	----

<b>Quantitative Habitat Analysis: A New Tool for the Integration of Modeling, Planning, and Management of Natural Resources—</b> LAURA K. MARSH AND TIMOTHY HAARMANN	94
---	----

<b>Predicting Biodiversity Potential Using a Modified Layers of Habitat Model—</b> LAWRENCE A. KAPUSTKA, HECTOR GALBRAITH, MATT LUXON, JOAN M. YOCUM, AND WILLIAM J. ADAMS	107
--	-----

<b>Habitat Ranking System for the Threatened Preble's Meadow Jumping Mouse (<i>Zapus hudsonius preblei</i>) in Eastern Colorado—</b> THOMAS R. RYON, MIKE J. BONAR, KIRSTA L. SHERFF-NORRIS, AND ROBERT A. SCHORR	129
<b>Development of HSI Models to Evaluate Risks to Riparian Wildlife Habitat from Climate Change and Urban Sprawl—</b> HECTOR GALBRAITH, JEFF PRICE, MARK DIXON, AND JULIE STROMBERG	148
<b>Application of Habitat Suitability Index Values to Modify Exposure Estimates in Characterizing Ecological Risk—</b> LAWRENCE A. KAPUSTKA, HECTOR GALBRAITH, MATT LUXON, JOAN M. YOCUM, AND WILLIAM J. ADAMS	169
<b>Sunflower Depredation and Avicide Use: A Case Study Focused on DRC-1339 and Risks to Non-Target Birds in North Dakota and South Dakota—</b> GREG LINDER, ELIZABETH HARRAHY, LYNNE JOHNSON, LARRY GAMBLE, KEVIN JOHNSON, JOY GOBER, AND STEPHANIE JONES	202
<b>GIS-Based Localization of Impaired Benthic Communities in Chesapeake Bay: Associations with Indicators of Anthropogenic Stress—</b> BENJAMIN L. PRESTON	221
<b>Estimating Receptor Sensitivity to Spatial Proximity of Emissions Sources—</b> VLADIMIR P. RESHETIN	242

### SESSION III

<b>Toward an Ecological Framework for Assessing Risk to Vertebrate Populations from Brine and Petroleum Spills in Exploration and Production Sites—</b> REBECCA A. EFROYMONSON, TINA M. CARLSEN, HENRIETTE I. JAGER, TANYA KOSTOVA, ERIC A. CARR, WILLIAM W. HARGROVE, JAMES KERCHER, AND TOM L. ASHWOOD	261
<b>Risk-Trace: Software for Spatially Explicit Exposure Assessment—</b> IGOR LINKOV, ALEXANDRE GREBENKOV, ANATOLI ANDRIZHIEVSKI, ALEXEI LOUKASHEVICH, AND ALEXANDER TRIFONOV	286
<b>Incorporating Spatial Data into Ecological Risk Assessments: The Spatially Explicit Exposure Module (SEEM) for ARAMS—</b> W. T. WICKWIRE, CHARLES A. MENZIE, DMITRIY BURMISTROV, AND BRUCE K. HOPE	297
<b>Approaches to Spatially-Explicit, Multi-Stressor Ecological Exposure Estimation—</b> BRUCE K. HOPE	311

INDEX	325
-------	-----

# Overview

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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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