

## Road Ecology: Science and Solutions

*By Richard T.T. Forman, Daniel Sperling, John A. Bissonette, Anthony P. Clevenger, Carol D. Cutshall, Virginia H. Dale, Lenore Fahrig, Robert L. France, Charles R. Goldman, Kevin Heanue, Julia Jones, Frederick Swanson, Thomas Turrentine, Thomas C. Winter*

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A central goal of transportation is the delivery of safe and efficient services with minimal environmental impact. In practice, though, human mobility has flourished while nature has suffered. Awareness of the environmental impacts of roads is increasing, yet information remains scarce for those interested in studying, understanding, or minimizing the ecological effects of roads and vehicles.

Road Ecology addresses that shortcoming by elevating previously localized and fragmented knowledge into a broad and inclusive framework for understanding and developing solutions. The book brings together fourteen leading ecologists and transportation experts to articulate state-of-the-science road ecology principles, and presents specific examples that demonstrate the application of those principles. Diverse theories, concepts, and models in the new field of road ecology are integrated to establish a coherent framework for transportation policy, planning, and projects. Topics examined include: foundations of road ecology, roads, vehicles, and transportation planning, vegetation and roadsides, wildlife populations and mitigation, water, sediment, and chemical flows, aquatic ecosystems, wind, noise, and atmospheric effects, road networks and landscape fragmentation

Road Ecology links ecological theories and concepts with transportation planning, engineering, and travel behavior. With more than 100 illustrations and examples from around the world, it is an indispensable and pioneering work for anyone involved with transportation, including practitioners and planners in state and province transportation departments, federal agencies, and nongovernmental organizations. The book also opens up an important new research frontier for ecologists.

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## **Editorial Review**

### **Review**

"...this volume focuses on bringing together information from disparate fields into a coherent framework, accessible to transportation planners as well as ecologists."

*(Conservation in Practice)*

"How many contributors does it take to provide the best thinking and research about how our road systems and our natural environment can coexist? In the case of *Road Ecology: Science and Solutions*...the answer is 14.... For any planner who deals with natural areas, this book offers a thoughtful and thought-provoking introduction to an unjustifiably neglected field."

*(Planning)*

### **About the Author**

Richard T. T. Forman is the PAES Professor of Landscape Ecology at the Harvard University Graduate School of Design School; among his books is the award-winning *Land Mosaics* (Cambridge University Press, 1995).

Daniel Sperling is Professor of Civil Engineering and Environmental Science and Policy, and founding director of the Institute of Transportation Studies, University of California-Davis.

Adjunct Associate Professor of Landscape Ecology, Harvard University, Graduate School of Design

The twelve co-authors are: John A. Bissonette (Utah State University); Anthony P. Clevenger (Banff National Park); Carol D. Cutshall (Wisconsin Department of Transportation); Virginia H. Dale (Oak Ridge National Laboratory); Lenore Fahrig (Carleton University); Robert France (Harvard University); Charles R. Goldman (University of California-Davis); Kevin Heanue (formerly U. S. Federal Highway Administration); Julia A. Jones (Oregon State University); Frederick J. Swanson (USDA Forest Service); Thomas Turrentine (University of California-Davis); and Thomas C. Winter (U. S. Geological Survey).

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