Winner of the IENE Project Award 2016.

This authoritative volume brings together some of the world’s leading researchers, academics, practitioners and transportation agency personnel to present the current status of the ecological sustainability of the linear infrastructure – primarily road, rail and utility easements – that dissect and fragment landscapes globally. It outlines the potential impacts, demonstrates how this infrastructure is being improved, and how broad ecological principles are applied to mitigate the impact of road networks on wildlife.

Research and monitoring is an important aspect of road ecology, encompassing all phases of a transportation project. This book covers research and monitoring to span the entire project continuum – starting with planning and design, through construction and into maintenance and management. It focuses on impacts and solutions for species groups and specific regions, with particular emphasis on the unique challenges facing Asia, South America and Africa.

Other key features:

• Contributions from authors originating from over 25 countries, including from all continents

• Each chapter summarizes important lessons, and includes lists of further reading and thoroughly up to date references

• Highlights principles that address key points relevant to all phases in all road projects

• Explains best-practices based on a number of successful international case studies
• Chapters are “stand-alone”, but they also build upon and complement each other; extensive cross-referencing directs the reader to relevant material elsewhere in the book

_Handbook of Road Ecology_ offers a comprehensive summary of approximately 30 years of global efforts to quantify the impacts of roads and traffic and implement effective mitigation. As such, it is essential reading for those involved in the planning, design, assessment and construction of new roads; the management and maintenance of existing roads; and the modifying or retrofitting of existing roads and problem locations. This handbook is an accessible resource for both developed and developing countries, including government transportation agencies, Government environmental/conservation agencies, NGOs, and road funding and donor organisations.

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⚠️ ABOUT THE AUTHOR

About the Editors:

Associate Professor Rodney van der Ree has studied the impacts of human activities on biodiversity since the mid 1990s. His current focus includes urban ecology and road ecology, with a strong emphasis on improving research and monitoring and ensuring evidence-based information contributes to the design and management of infrastructure. Rodney is currently the Deputy Director of the Australian Research Centre for Urban Ecology at the Royal Botanic Gardens Melbourne and The University of Melbourne. He was awarded the Graeme Caughley Travelling fellowship in 2014 to promote and enhance road ecology in developing countries.

Daniel Smith is a research associate and member of the graduate faculty in the Department of Biology at the University of Central Florida and a member of the National Academies Transportation Research Board Subcommittee on Ecology and Transportation. Dr. Smith has 20+ years of experience in the fields of ecology and environmental planning. His primary focus is studying movement patterns and habitat use of terrestrial vertebrates and integrating conservation, transportation and land-use planning. He received the 2014 land conservation and planning award from the Florida Wildlife Federation for his outstanding contributions to sound use and management of Florida’s natural resources.

Clara Grilo obtained her doctorate in Conservation Biology from the University of Lisbon (Portugal). Her primary
interest is applied ecological research in support of active conservation projects. Over the last years, much of her research has focused on the impact of anthropogenic changes to the landscape and effects on wildlife. Currently, she is coordinating research projects on road ecology, namely the effects of roads on the abundance, spatial behavior, population genetic structure and risk of mortality on owls and mammals and the effectiveness of measures to reduce the negative effects of roads on wildlife.

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