

# Contents

- 1** Protect remaining roadless areas: The IENE 2014 declaration  
*IENE*
- 5** Greener transport infrastructure – IENE 2014 International Conference  
*Andreas Seiler, Jan-Olof Helldin*
- 13** Traffic mortality of four ungulate species in southern Finland  
*Milla Niemi, Jubo Matala, Markus Melin, Visa Eronen, Hannu Järvenpää*
- 29** Citizen science and smartphones take roadkill monitoring to the next level  
*Diemer Vercautie, Marc Herremans*
- 41** Wildlife-vehicle collision hotspots at US highway extents: scale and data source effects  
*Fraser M. Shilling, David P. Waetjen*
- 61** Testing alternative designs for a roadside animal detection system using a driving simulator  
*Molly K. Grace, Daniel J. Smith, Reed F. Noss*
- 79** A remarkably quick habituation and high use of a rope bridge by an endangered marsupial, the western ringtail possum  
*Kaori Yokochi, Roberta Bencini*
- 95** The BioREGIO Carpathians project: aims, methodology and results from the “Continuity and Connectivity” analysis  
*Filippo Favilli, Christian Hoffmann, Marianna Elmi, Elisa Ravazzoli, Thomas Streifeneder*
- 113** Compensation in Swedish infrastructure projects and suggestions on policy improvement  
*Jesper Persson, Anders Larsson, Ana Villarroja*
- 129** Minor rural road networks: values, challenges, and opportunities for biodiversity conservation  
*Peter G. Spooner*
- 143** Abundance of red-listed species in infrastructure habitats – “responsibility species” as a priority-setting tool for transportation agencies’ conservation action  
*Jan-Olof Helldin, Jörgen Wissman, Tommy Lennartsson*

The journal Nature Conservation was established within the framework of the European Union's Framework Program 7 large-integrated project SCALES: *Securing the Conservation of biodiversity across Administrative Levels and spatial, temporal, and Ecological Scales*, [www.scales-project.net](http://www.scales-project.net)



 <http://natureconservation.pensoft.net>



# Nature Conservation

Launched to accelerate biodiversity conservation

A peer-reviewed open-access journal

## PROCEEDINGS OF IENE 2014 INTERNATIONAL CONFERENCE ON ECOLOGY AND TRANSPORTATION, MALMÖ, SWEDEN

EDITED BY  
ANDREAS SEILER & JAN-OLOF HELLDIN



11 ♦ 2015  
Special Issue



<http://natureconservation.pensoft.net>

## For those who want their work rapidly known to the World !

### Editor-in-Chief

Klaus Henle  
Helmholtz Centre for  
Environmental Research  
UFZ  
Leipzig, Germany  
E-mail: klaus.henle@ufz.de

### Managing Editor

**Lyubomir Penev**  
Institute of Biodiversity and Ecosystem Research  
Bulgarian Academy of Sciences  
Yurii Gagarin Street 2  
1113 Sofia, Bulgaria  
E-mail: info@pensoft.net

**Editorial Board:** <http://natureconservation.pensoft.net/about>

### Focus and Scope

**Nature Conservation** is a peer-reviewed, open-access, online and print, rapidly published journal. It is launched to mobilize ideas and data in all theoretical and applied aspects of nature conservation – biological, ecological, social and economic. Its broad scope and innovative use of media encourage interdisciplinary and integrative approaches. All papers published in **Nature Conservation** can be freely downloaded, copied, printed and distributed at no charge to the reader. **Nature Conservation** is a new-generation journal and can be seen as a platform comprising both innovative algorithms and a routine medium for the publication of data related to biodiversity.

**Nature Conservation** will consider publishing the following types of manuscripts:

- Original research articles
- Comprehensive reviews, historical analyses, ecological modelling and scenarios
- Monographs and collections of papers with no limit in size, published as 'special issues'
- Applied conservation papers
- Short communications
- Letters and Forum papers
- Trend scanning papers
- Datasets and Data papers
- Web-based tools
- Book reviews

ISBN numbers will be assigned to large monographic papers, monographs, collections of papers, Festschrift volumes, atlases, checklists, conspecti.

All content is Open Access distributed under the terms of the *Creative Commons Attribution License*, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited. Authors are thus encouraged to post the pdf files of published papers on their homepages or elsewhere to expedite distribution.

### Editorial Office

Pensoft Publishers  
Prof. Georgi Zlatarski 12, 1700 Sofia, Bulgaria  
Tel. +359-2-8704281, Fax +359-2-8704282  
E-mail: natureconservation@pensoft.net  
[www.pensoft.net/journals/natureconservation](http://www.pensoft.net/journals/natureconservation)

### AUTHOR GUIDELINES

Authors are kindly requested to submit their manuscript *only* through the online submission module at [www.pensoft.net/journals/natureconservation](http://www.pensoft.net/journals/natureconservation). In case of difficulties with the submission procedure, please contact [natureconservation@pensoft.net](mailto:natureconservation@pensoft.net). Full text of author guidelines is available at: <http://natureconservation.pensoft.net/>

### EXCERPTS FROM THE GUIDELINES

**BODY TEXT.** All papers must be in English, checked by a native English-speaking colleague (if author(s) is/are not native English speaker(s)). Write with precision, clarity, and economy: use the active voice and first person whenever appropriate.

**WEB (HTML) LINKS.** Authors may include links to other Internet resources in their article. This is especially encouraged in the reference section. When inserting a reference to a web-page, please include the **http://** portion of the address.

**CITATIONS WITHIN THE TEXT.** Before submitting the manuscript, check each citation in the text against the **References** to ensure that they match exactly. Delete citations from the list if they are not actually cited in the text of the article. Citations in the text should be formatted as follows: (Smith 1990) or (Smith et al. 1998; Brock and Gunderson 2001; Felt 2006).

**REFERENCES.** It is crucial to properly format the references, because all references will be linked electronically as much as possible to the papers they cite. For all references, list all authors. You can include a **DOI** number for the full-text article as an alternative to or in addition to traditional volume and page numbers. Please use the following style for the reference list:

**Published Papers:** Haila Y (2012) Genealogy of nature conservation: a political perspective. *Nature Conservation* 1: 27–52.

**Accepted Papers:** Same as above, but "In press" appears instead the page numbers.

**Electronic Journal Articles:** Mallet J, Willmott K (2002) Taxonomy: renaissance or Tower of Babel? *Trends in Ecology and Evolution* 18 (2): 57-59. doi: 10.1016/S0169-5347(02)00061-7.

**Paper within conference proceedings:** Orr AG (2006) Odonata in Bornean tropical rain forest formations: Diversity, endemism and applications for conservation management. In Cordero Rivera A (Ed) *Forest and Dragonflies. Fourth WDA International Symposium of Odonatology, Pontevedra (Spain), July 2005*. Pensoft Publishers, Sofia-Moscow, 51-78.

**Book chapters:** Mayr E (2000) The biological species concept. In: Wheeler QD, Meier R (Eds) *Species Concepts and Phylogenetic Theory: A Debate*. Columbia University Press, New York, 17-29.

**Books:** Goix N, Klimaszewski J (2007) *Catalogue of Aleocharine Rove Beetles of Canada and Alaska*. Pensoft Publishers, Sofia-Moscow, 166 pp.

**Book with institutional author:** International Commission on Zoological Nomenclature (1999) *International code of zoological nomenclature. Fourth Edition*. London: The International Trust for Zoological Nomenclature.

**PhD thesis:** Dalebout ML (2002) *Species identity, genetic diversity and molecular systematic relationships among the Ziphiidae (beaked whales)*. PhD thesis, Auckland, New Zealand: University of Auckland.

**Link/URL:** BBC News: Island leopard deemed new species. <http://news.bbc.co.uk/3/VI/2008> [accessed 3.VI.2008]

**CITATIONS OF PUBLIC RESOURCE DATABASES:** It is highly recommended all appropriate datasets, images, and information to be deposited in public resources. Please provide the relevant accession numbers (and version numbers, if appropriate). Accession numbers should be provided in parentheses after the entity on first use. Examples of such databases include, but are not limited to:

- Zoobank ([www.zoobank.org](http://www.zoobank.org)),
- Morphbank ([www.morphbank.net](http://www.morphbank.net)),
- Genbank ([www.ncbi.nlm.nih.gov/Genbank](http://www.ncbi.nlm.nih.gov/Genbank)),
- BarCode ([www.barcodinglife.org](http://www.barcodinglife.org))

Providing accession numbers allows linking to and from established databases and integrates your article with a broader collection of scientific information. Please list all accession numbers directly **after the References**.

**DATA PUBLISHING.** The journal offers various models of data publishing in a cooperation with the GBIF ([www.gbif.org](http://www.gbif.org)), Dryad ([www.datadryad.org](http://www.datadryad.org)), Pangaea ([www.pangaea.de](http://www.pangaea.de)) and other data repositories.

**OPEN ACCESS FEES.** Publication fees in open access journals ensure a barrier-free distribution of your paper at no charge for the readers and include costs involved in processing, formatting, publishing, indexing and archiving your paper.

The journal charges Open Access Publication Fee of EURO 20 per page for papers of less than 100 printed pages. Publication fees for larger papers will be discounted and can be negotiated with the Managing Editor.

Open Access Publication Fees are usually covered by institutional funds and grants. Discounts/waivers can be requested by private and retired zoologists, scientists from low- and middle-level income countries, post-graduate students, especially in case of exceptionally good manuscripts.

Discounts will be offered also to scientists who actively participate in the reviewing and editing process.

**Note:** *Open access fees will be waived for all submissions published in the first four issues of Nature Conservation and will be reduced with 25 % until the journal will be covered by the ISI Web of Science. All papers published in the first issues will be later ISI covered and will have an Impact factor when the journal receives it.*

**PRINTED VERSION.** Offprints and printed issues of the journal can be purchased additionally (see journal's website). For standing orders/subscriptions please contact the Managing Editor.