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SHORT COMMUNICATION

Twenty years of Road Ecology: a Topical Collection looking forward for new perspectives

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Abstract
The *European Journal of Wildlife Research* introduces a new Topical Collection focused on Road Ecology. This Topical Collection aims to be a useful tool for the development of generalized principles and applications concerning wildlife-related aspects of Road Ecology. Submissions exploring new or lesser-known costs and potential benefits for wildlife coexisting with road networks are encouraged.

Keywords Road Ecology · Road-kills · Wildlife crossing-structures · Habitat loss and fragmentation · Barrier effect · Linear infrastructures

The *European Journal of Wildlife Research* introduces a new feature called Topical Collection, which is focused on promoting emerging areas of research. Topical Collections represent the future of the former Special Issues, and they are specially adapted to Continuous Article Publishing. Indeed, all the articles submitted at different times to the Topical Collection will be publicly available upon their very first acceptance. In addition to online publication in the Topical Collection, all articles are electronically published and printed in the regular volumes of the *European Journal of Wildlife Research*.

This first Topical Collection of the *European Journal of Wildlife Research* focuses on Road Ecology. Twenty years ago, the term Road Ecology was mentioned for the first time in international scientific journals (Forman 1998; Forman and Alexander 1998). The purpose of this discipline is to understand the interactions among roads, traffic, and the surrounding environment (Forman and Alexander 1998; Forman et al. 2003). Road-networks, indeed, are so globally widespread that a significant portion of the ecological literature is based on studies performed within road-effect zones (Forman 2000). For this reason, Road Ecology embraces several fields of research, including wildlife-vehicle collisions, changes in animal behavior such as road avoidance, landscape connectivity and habitat fragmentation, barrier effects, pathways for biological invasions, and pollution (Forman and Alexander 1998; Trombulak and Frissell 2000). Road Ecology also concerns the effectiveness of mitigation measures (such as wildlife crossing-structures) and the study of potential benefits for wildlife coexisting with road-networks (such as their use for movement or scavenging on road-killed fauna; Forman and Alexander 1998; Trombulak and Frissell 2000; Fig. 1). Nevertheless, over the years, Road Ecology studies have focused mostly on wildlife-vehicle collisions and the use of wildlife crossing-structures, and, secondarily, on the impacts related to habitat fragmentation and barrier effects (Forman et al. 2003; van der Ree et al. 2015). Overall, this emerging discipline needs to further develop generalized principles and applications. This Topical Collection aims to be a useful tool for such purposes, bringing renewed attention to Road Ecology and providing a forum for collaborative dialogue.

The *European Journal of Wildlife Research* has recently published several manuscripts on different aspects of Road Ecology such as wildlife-vehicle collisions and road-avoidance behaviors (Skuban et al. 2017), other road-related changes in animal

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Fig. 1 American bison (*Bison bison*) moving along roads and grazing on roadside vegetation in Elk Island National Park (Canada)

behavior (Mata et al. 2017), and the effectiveness of mitigation measures (Brieger et al. 2017), among many others. While already published manuscripts cannot be part of this Topical Collection, they demonstrate the relevance of this discipline for the Journal and are available to our readership. This Topical Collection will consider for publication all the high-quality manuscripts concerning wildlife-related aspects of Road Ecology, including original papers (both empirical and theoretical investigations), reviews (both systematic reviews and perspectives), short communications, and technical notes (describing novel techniques or methodological improvements). Submissions exploring new or lesser-known costs and potential benefits for wildlife coexisting with road-networks, and those of an applied and cross-disciplinary nature, are encouraged. Importantly, this Topical Collection will also consider for publication all research on wildlife and other linear infrastructures, such as railways or power lines, as they share similar positive and negative effects on biodiversity (Borda-de-Água et al. 2017; D'Amico et al. 2018). Furthermore, all manuscripts including data on road-related mortality or the use of wildlife crossing-structures will be invited to respectively co-author two data papers, curated by Dr. Fernando Ascensão and Dr. Rafael Barrientos, aiming to provide standardized and accessible global-scale information on these two topics. Each data paper will be provided with a unique DOI.

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