RISKY

Wildlife Mortality from Energy and Transport Infrastructure

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Filipa Coutinho Soares
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Ana Teresa Marques
Clara Grilo

OSCARS
Open Science Clusters' Action for Research & Society

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RISKY

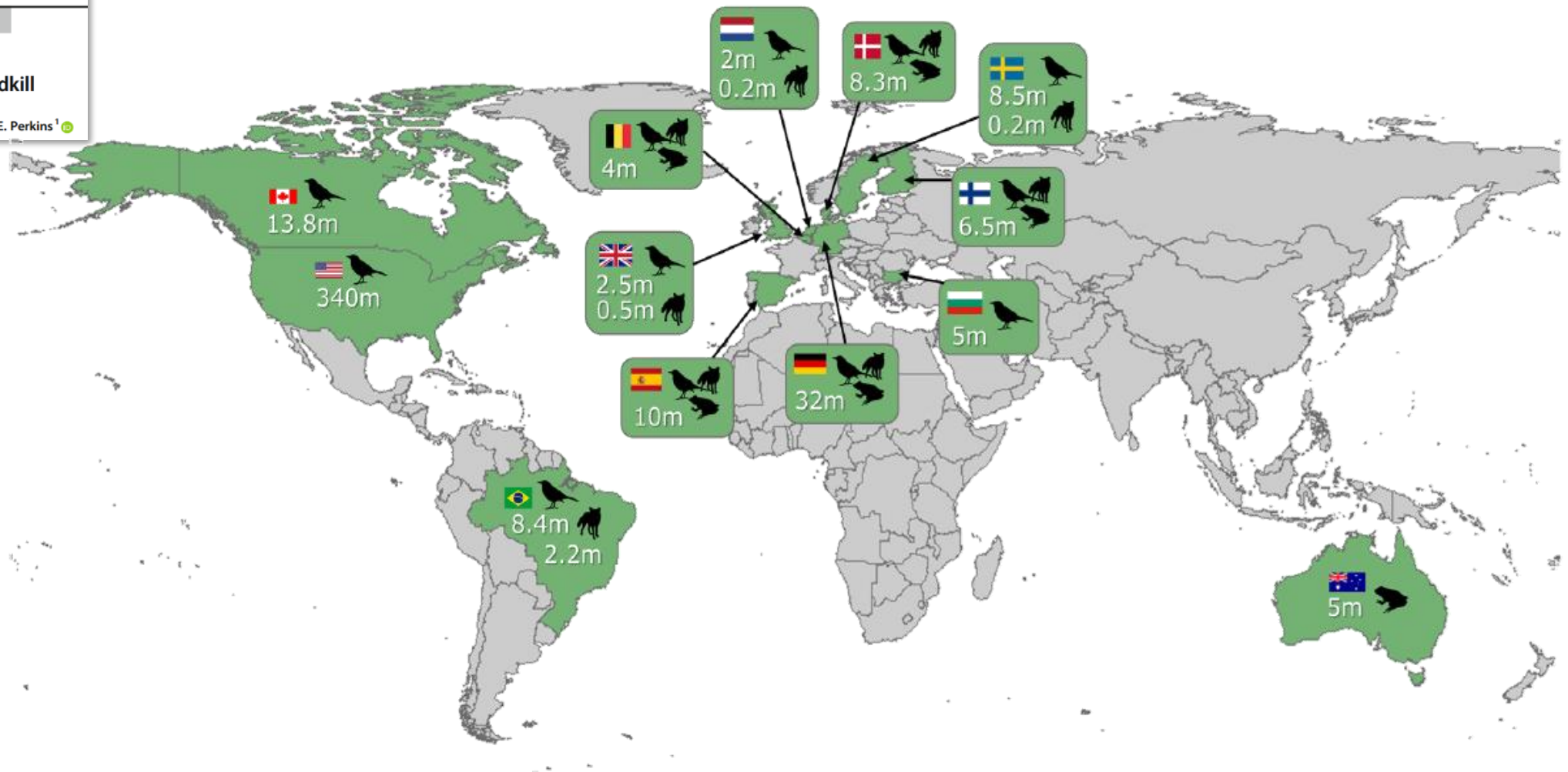
Wildlife-vehicle collisions

European Journal of Wildlife Research (2020) 66: 18
https://doi.org/10.1007/s10344-019-1357-4

REVIEW

The value of monitoring wildlife roadkill

Amy L. W. Schwartz[1] · Fraser M. Shilling[2] · Sarah E. Perkins[1]



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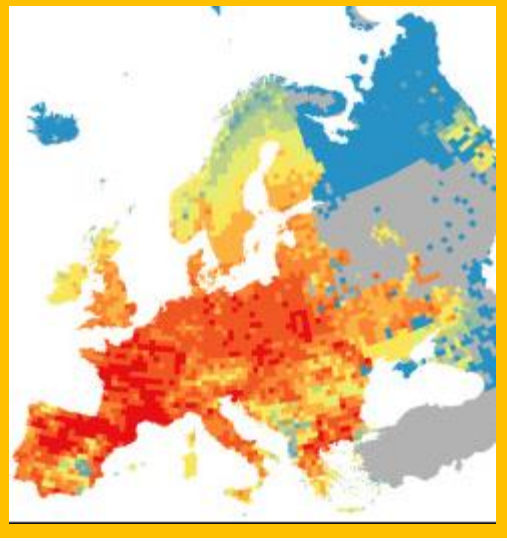
Where? When? Why?

Biological Conservation
Volume 249, September 2020, 108729

A forecasting map of avian roadkill-risk in Europe: A tool to identify potential hotspots

Federico Morelli [a], Yanina Benedetti [a], Juan D. Delgado [b]



PLOS One

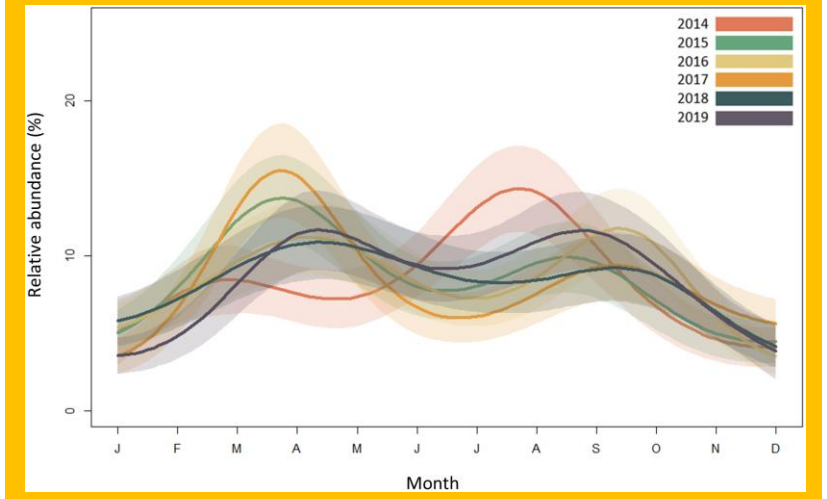
Publish About Browse

OPEN ACCESS PEER-REVIEWED
RESEARCH ARTICLE

Temporal patterns of wildlife roadkill in the UK

Sarah Raymond, Amy L. W. Schwartz, Robert J. Thomas, Elizabeth Chadwick, Sarah E. Perkins

Published: October 6, 2021 • https://doi.org/10.1371/journal.pone.0258083



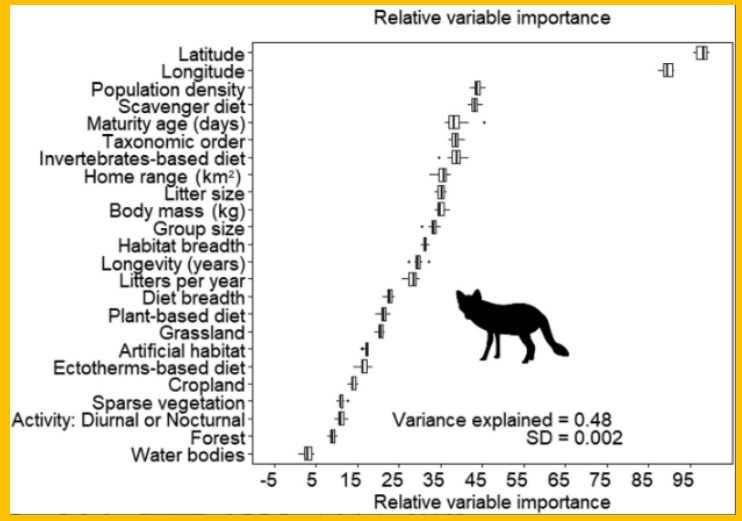
Global Ecology and Biogeography
A Journal of Macroecology

RESEARCH ARTICLE | Open Access

Roadkill patterns in Latin American birds and mammals

Pablo Medrano-Vizcaíno, Clara Grilo, Fernando Antônio Silva Pinto, William Douglas Carvalho, Ramiro Dário Melinski, Eduardo D. Schultz, Manuela González-Suárez

First published: 25 June 2022 | https://doi.org/10.1111/geb.13557 | Citations: 45



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Why Collect Big Mortality Data and make it Open access?

Prevent the collection of redundant data

Standardization of data in a user-friendly format

Valuable resources for both local and macro-scale analyses

New hypotheses, conduct meta-analyses

Identify vulnerable species

Inform infrastructure planning

Support conservation priorities

Promote transparency & collaboration

Promotes the advance of infrastructure ecology

Why share data? (transport)

Road safety & Infrastructure Quality

- Prevent accidents
- Clarify causes of accidents
- Protect infrastructure assets

Financial Risk Reduction

- Avoid costly accidents and repairs
- **Enable cost-effective solutions**

Planning and Development

- Improve infrastructure siting
- Enhance mitigation planning
- Assess mitigation effectiveness

Public Image and Stakeholder Trust

- **Strengthen public and stakeholder confidence**
- **Support licensing and permitting processes**

Why share data? (energy)

Financial Risk Reduction

- Smarter investment in mitigation
- Lower monitoring costs
- Access to innovation
- Avoid costly repairs
- Enable cost-effective solutions

Planning and Development

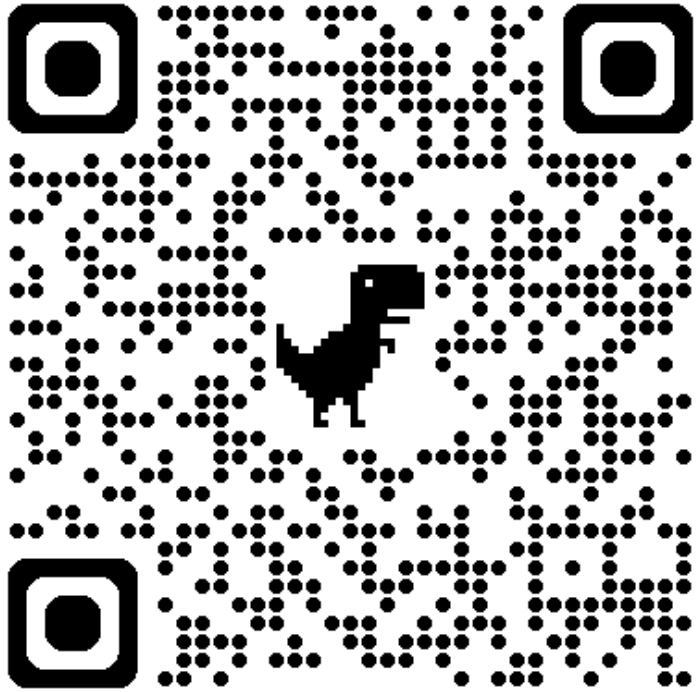
- Improve infrastructure siting
- Enhance mitigation planning
- Assess mitigation effectiveness

Public Image and Stakeholder Trust

- Strengthen public and stakeholder confidence
- Support licensing and permitting processes

Our project

RISKY



OSCARS
Open Science Clusters' Action for Research & Society

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Our project

Implemented by

BIOPOLIS cibio InBIO REDE DE INVESTIGAÇÃO em Biodiversidade e Biologia Evolutiva

Clara Grilo, Tomé Neves, Filipa Coutinho Soares, Joana Bernardino, Ana Teresa Marques

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Renewables Grid Initiative — Liam Innis

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universität freiburg — Manisha Bhardwaj

Wildlife Institute of India — Akanksha Saxena

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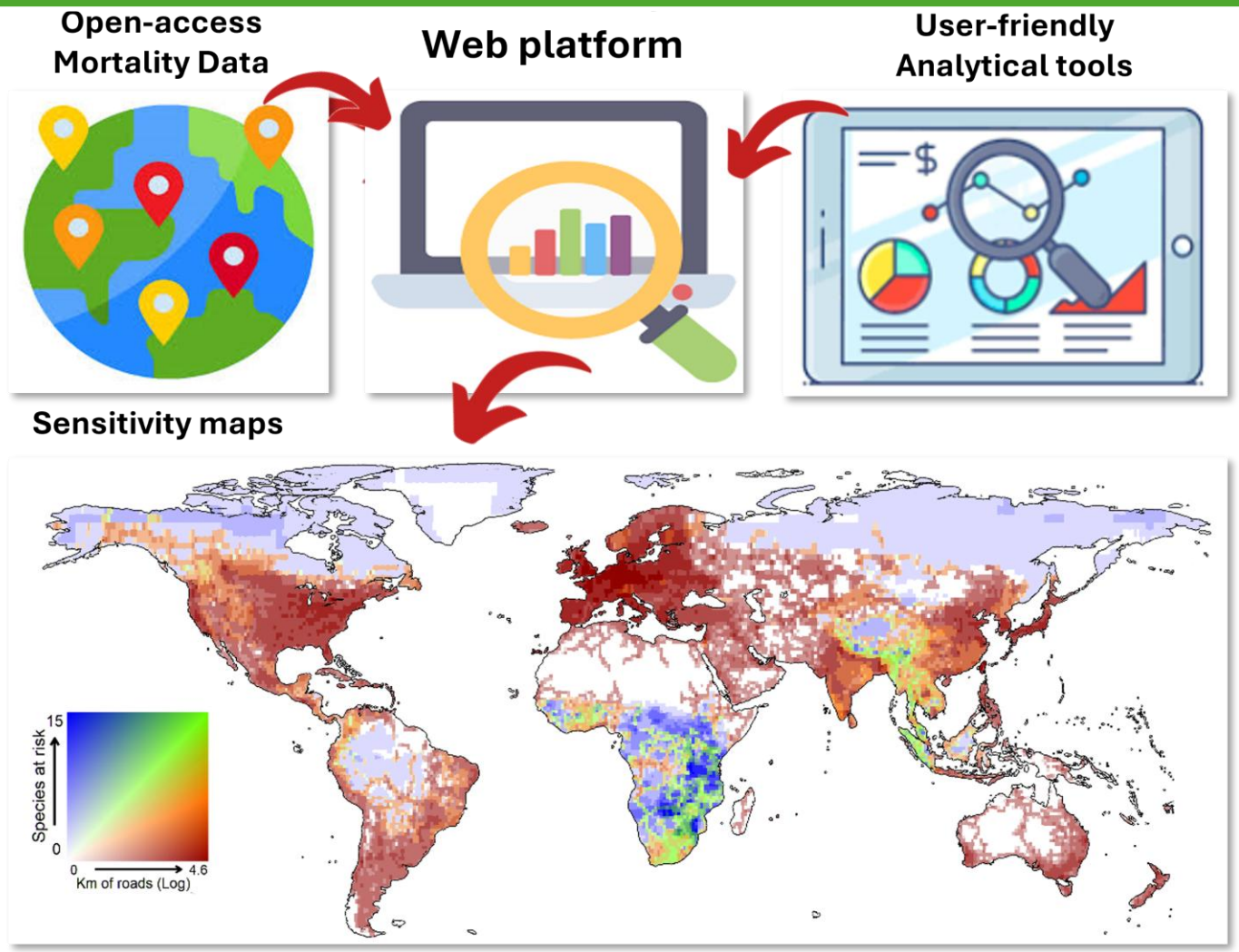

Open-access
Mortality Data
Web platform
User-friendly
Analytical tools
Sensitivity maps
Species at risk
15
0
0
4.6
Km of roads (Log)

Mortality

Locations

- Literature review
- Invite the authors
- Share data
- Standardize the dataset
- Publish in open access (datapaper)

Rates

- Literature review
- Compile nº deaths & survey effort
- Estimate mortality rates (ind./infrastructure/year)
- Correct mortality rates by carcass persistence
- Publish in open access

RISKY

Mortality locations (roads)

scientific data

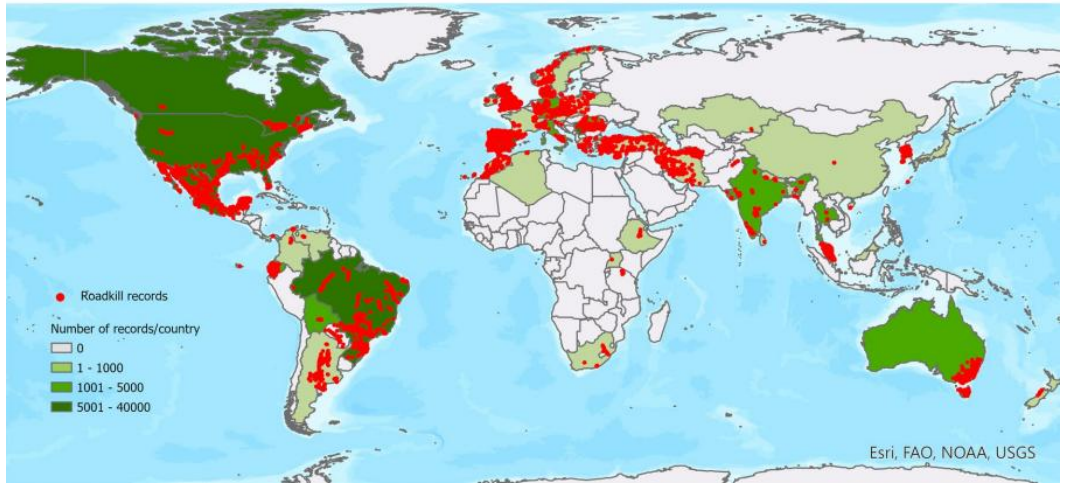
Check for updates

OPEN

DATA DESCRIPTOR

Global Roadkill Data: a dataset on terrestrial vertebrate mortality caused by collision with vehicles

Clara Grilo[1,2,3,4,319], Tomé Neves[1,2,3,319], Jennifer Bates[5], Aliza le Roux[6,7], Pablo Medrano-Vizcaíno[8,9], Mattia Quaranta[1,2,3], Inês Silva[10], Kylie Soanes[11], Yun Wang[12] & Data Collection Consortium*



+ 400 authors + 50 countries + 200 000 records

RISKY

Mortality locations (railways)

+ 26 authors

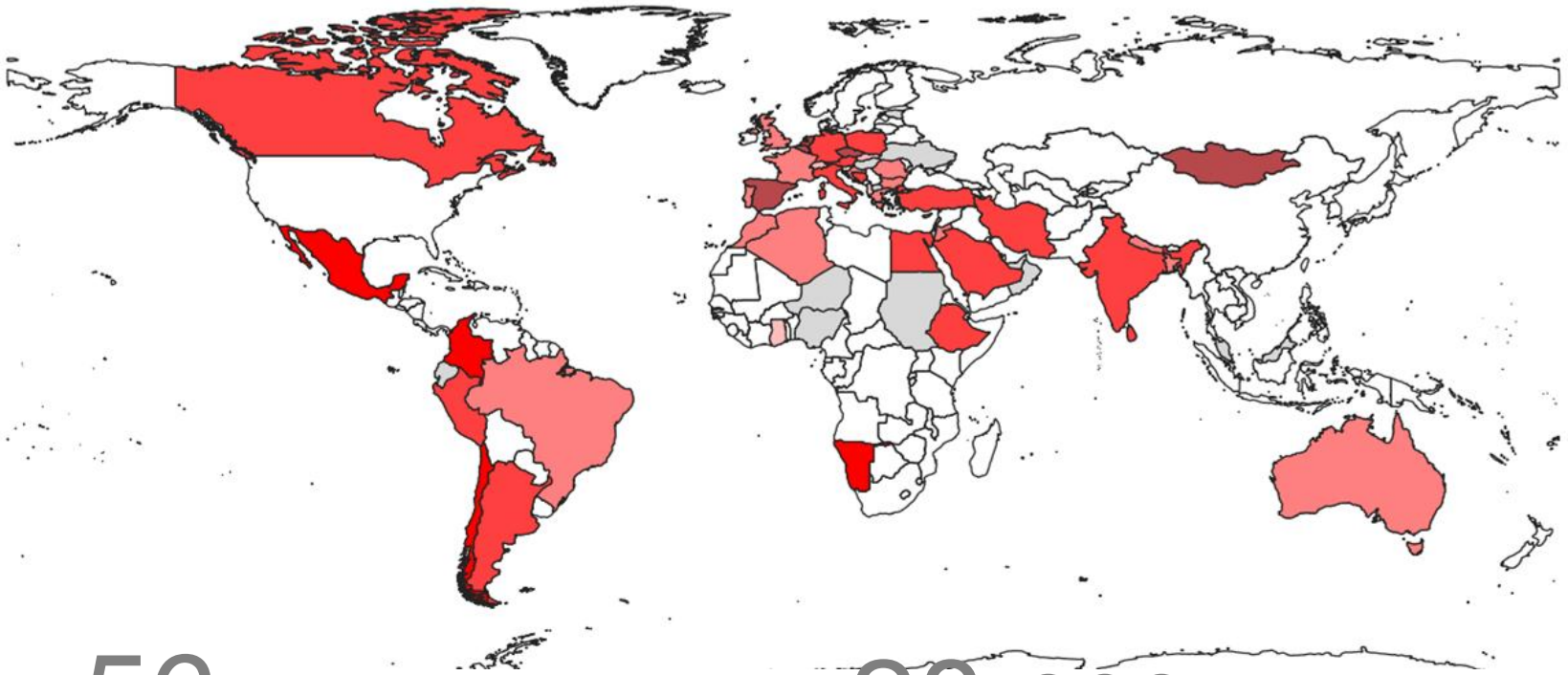
+ 12 countries

+ 31758 records

18 threatened species

RISKY

Mortality locations (power lines)



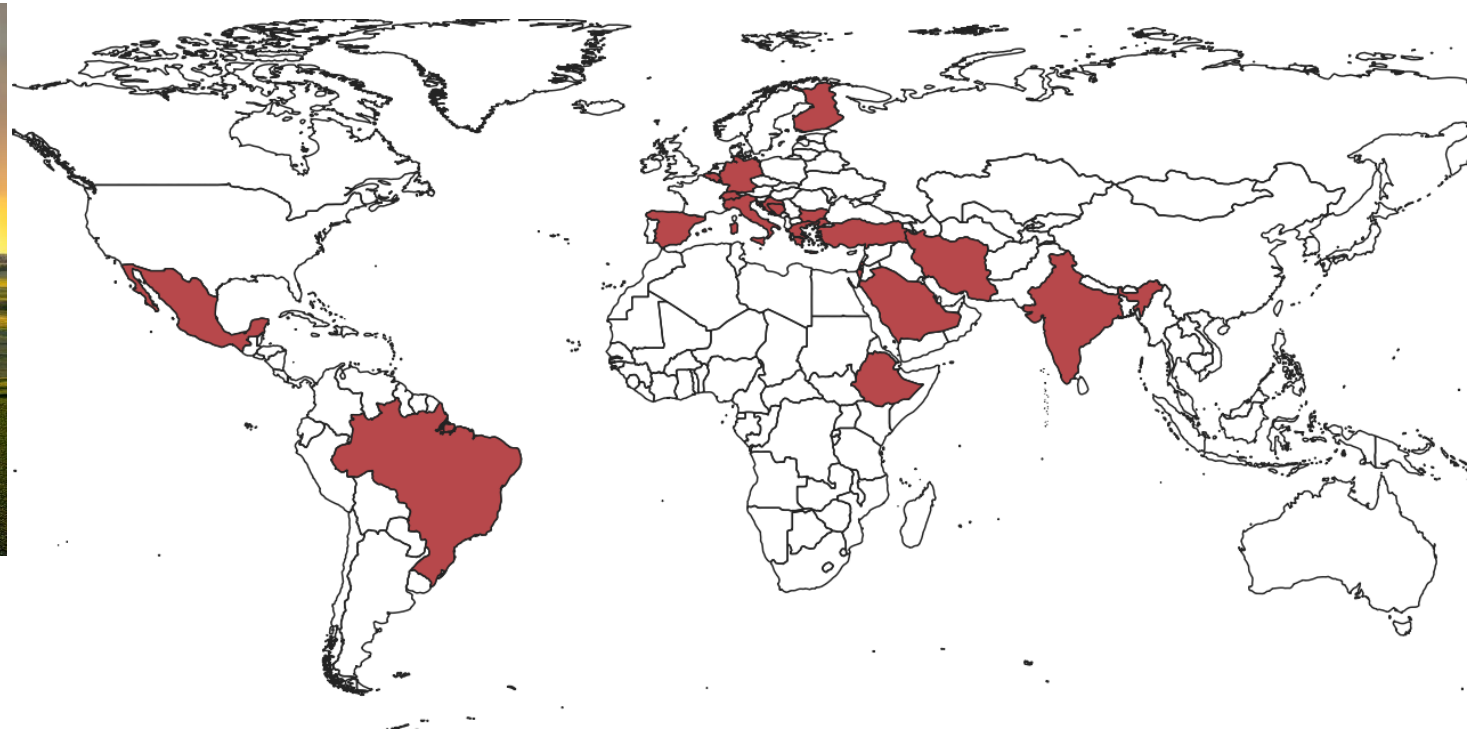
+ 71 authors

+ 56 countries

+ 28 000 records

RISKY

Mortality locations (wind farms)



+ 63 authors + 14 countries + 13506 records

RISKY

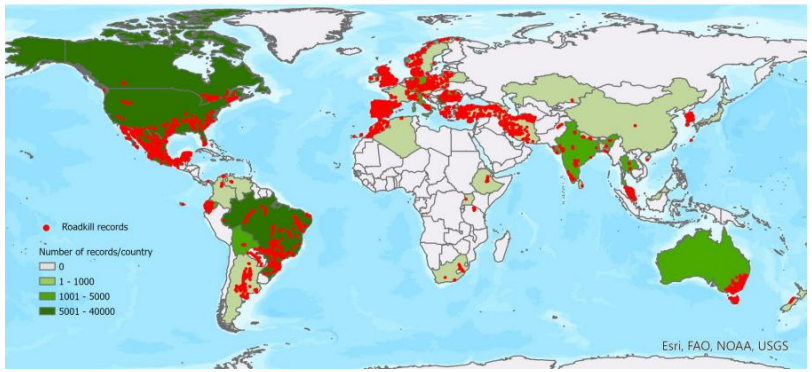
Mortality locations

Opportunities

- Identify knowledge gaps and define priority areas or taxa that are currently underestimated.
- Provide an overview of species affected by mortality, highlighting patterns across taxa.
- Identify threatened or protected species documented as roadkill.
- Describe spatial and temporal patterns of wildlife mortality.
- Detect road and landscape characteristics associated with higher collision likelihood.
- Using systematic surveys allows assessment of population-level impacts.

RISKY

Mortality rates



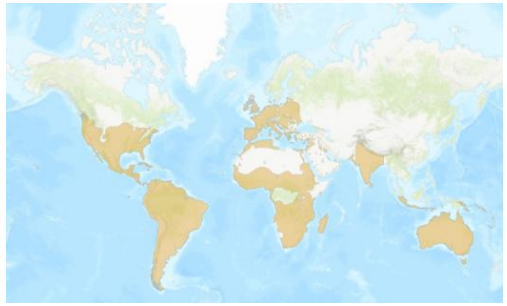
Mortality rates

+

Species traits

+

Species range



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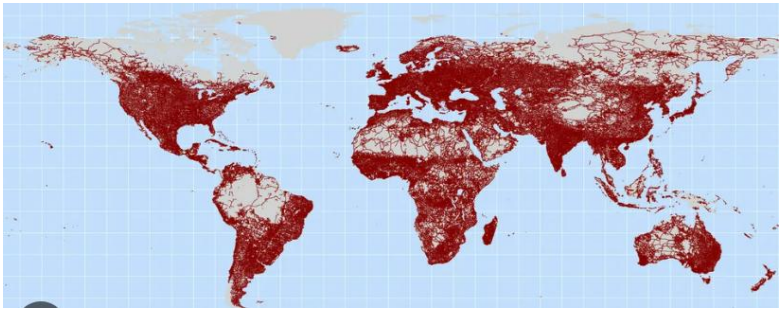
Road map



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Risk of collisions

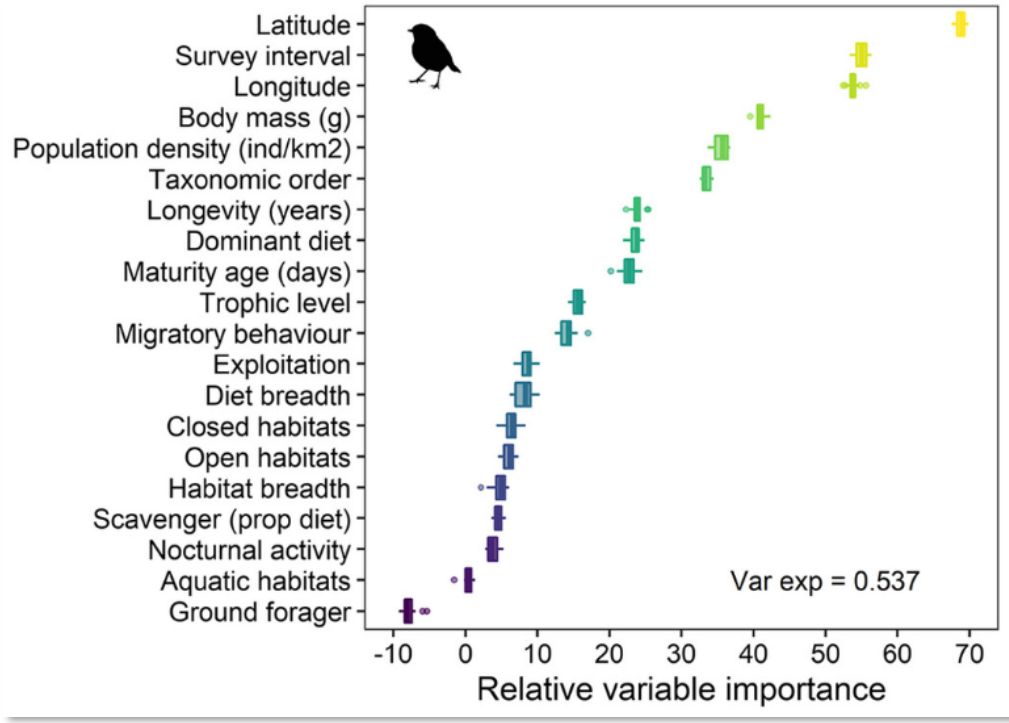
FRONTIERS IN ECOLOGY and the ENVIRONMENT

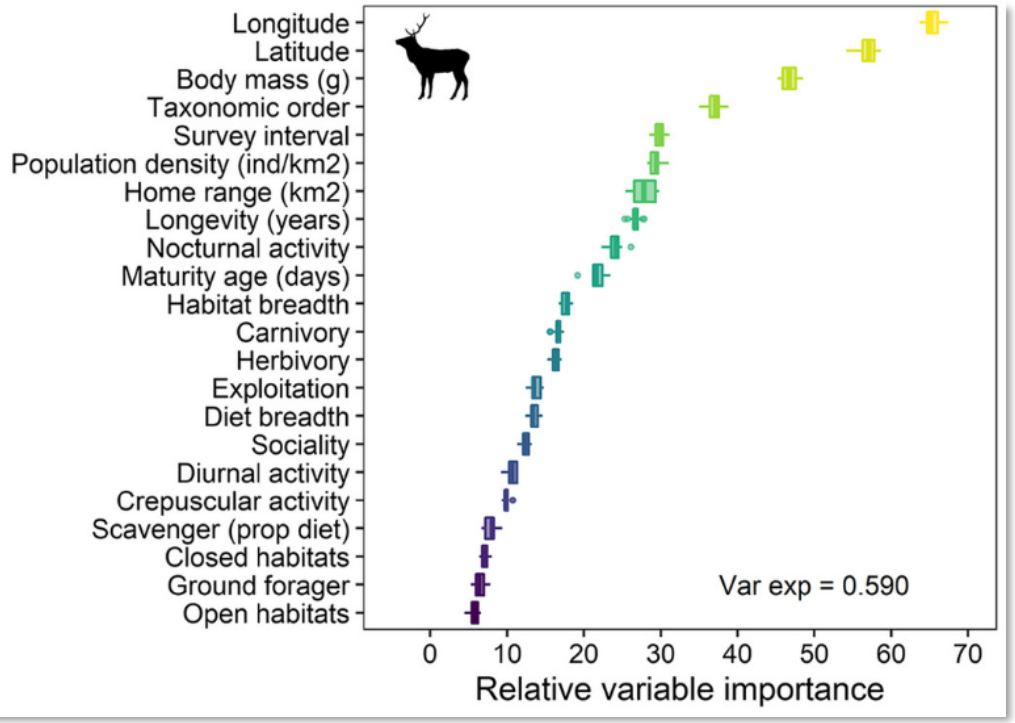
Research Communications | Full Access

Roadkill risk and population vulnerability in European birds and mammals

Clara Grilo, Elena Koroleva, Richard Andrášik, Michal Bíl, Manuela González-Suárez

First published: 08 June 2020 | https://doi.org/10.1002/fee.2216 | Citations: 123





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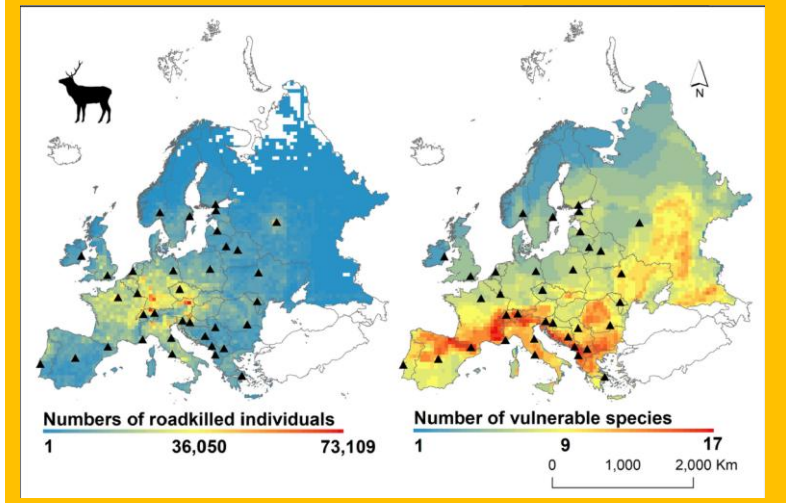
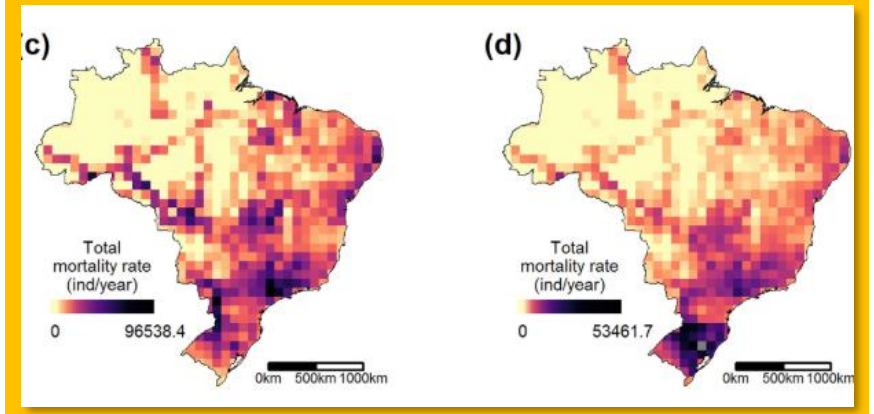


Global Ecology and Biogeography
A Journal of Macroecology

RESEARCH PAPER | Full Access

Spatial and species-level predictions of road mortality risk using trait data

Manuela González-Suárez, Flávio Zanchetta Ferreira, Clara Grilo



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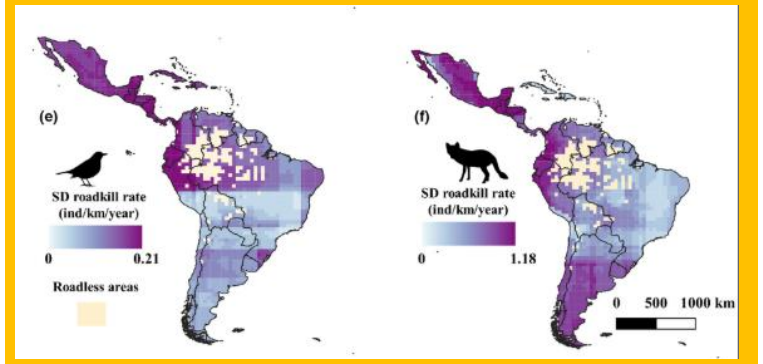


Risk of extinction

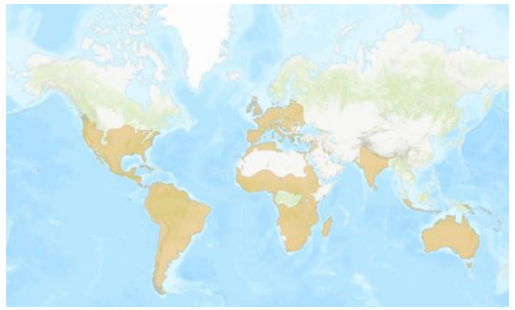
Mortality rates

+

Demographic parameters

+

Species range



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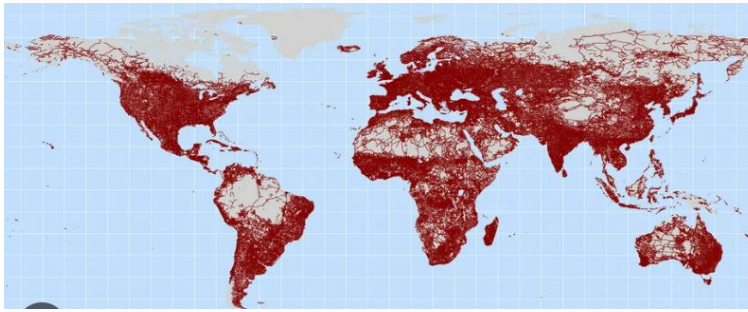
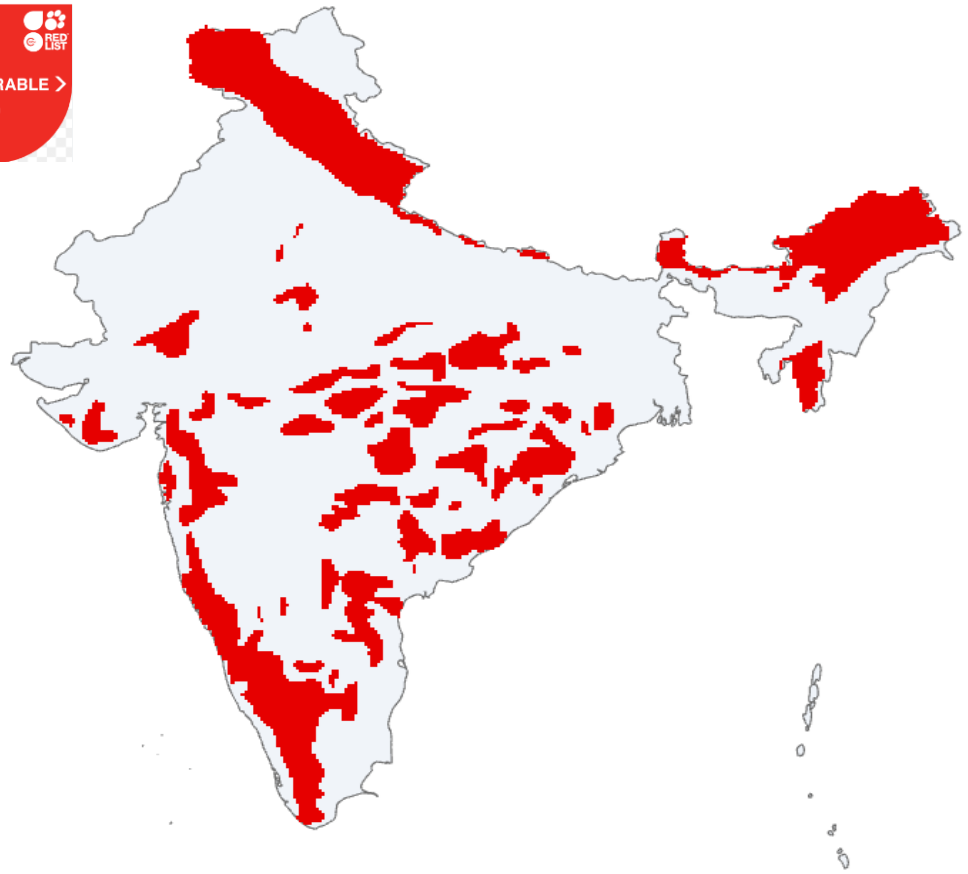
Infrastructure network



Risk of extinction

Predict which species can be impacted by mortality



0.03

ind./km/year

Risk of extinction

Predict which species can be impacted by mortality

	Leopard
Roadkill rate (ind/km/year)	0.03
Population density (ind/km2)	0.04
Maturity age (months)	30
Interval between births (months)	19.5
Max litter size	3
Survival rates ♂	cub: 0.39; juvenile:0.80 adult:0.94
Survival rates ♀	cub: 0.39; juvenile:0.93 adult:0.86
Longevity (months)	194
Max dispersal length (km)	15

Risk of extinction

Predict which species can be impacted by mortality

0.03

ind./km/year

Survival

Extinction

2030

< 4%

< 46%

2050

< 68%

2080

Global Open Access to Mortality Data

Transparency, not exposure

Data drives better decisions

Collaboration accelerates progress

RISKY

THANK YOU FOR YOUR INTEREST!

Paco Pando
Contact: pando@gbif.es

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