Infraestruturas de Portugal
Ligamos destinos

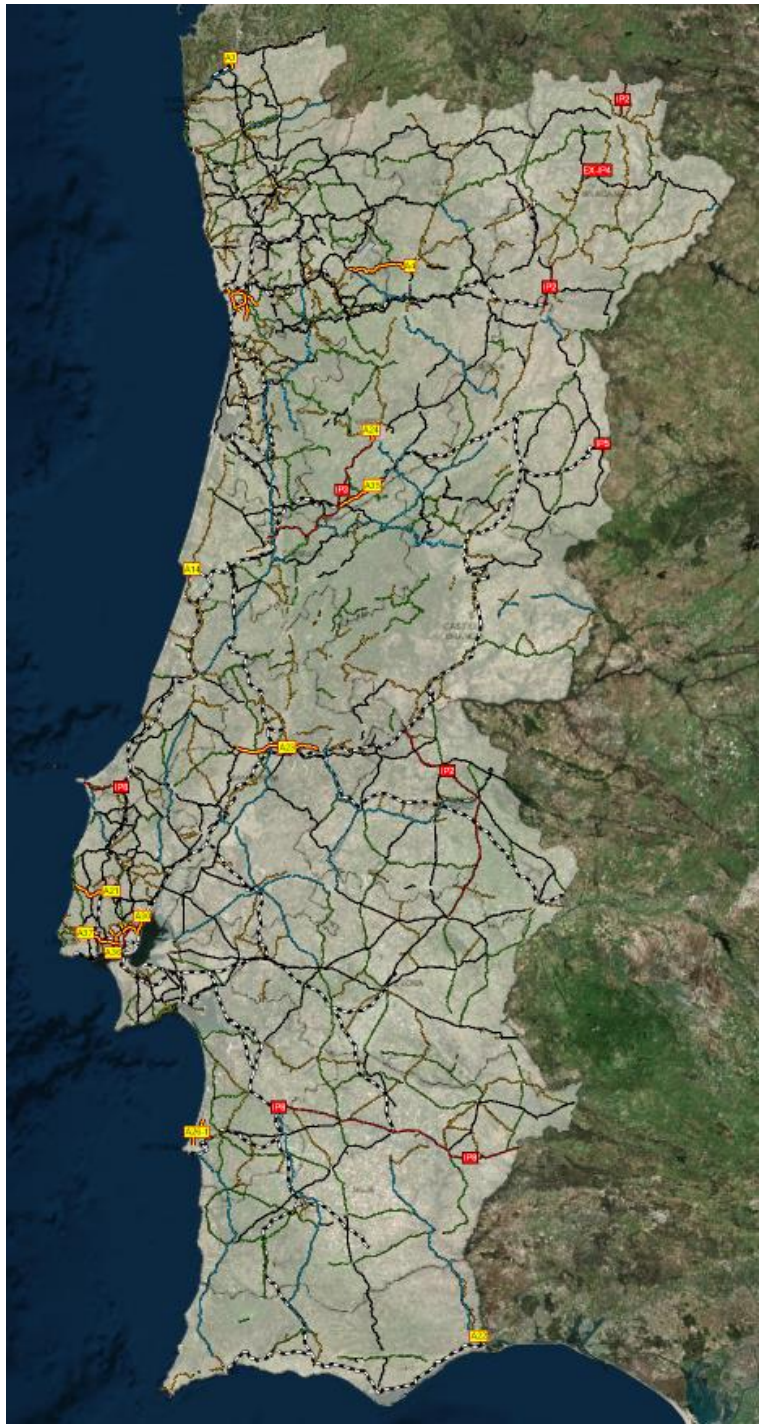
# A National Program to Monitor Fauna Roadkills in Portugal

Graça Garcia

## 01 Introduction

Infraestruturas de Portugal (IP) is the Portuguese public company holding a long-term concession contract of the national road and rail infrastructures in Portugal.

IP manages around 14,000 km of roads and over 2,500 km of railways, providing a public service in areas such as funding, maintenance, operation and development of the Road and Rail Networks.



Environmental sustainability is one important goal of IP and is incorporated in IP's procedures.

IP recognizes habitat fragmentation and mortality as a major threat to biodiversity

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Fauna Road Kills is an IP's Environmental Indicator

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Fauna Mortality Monitoring Program

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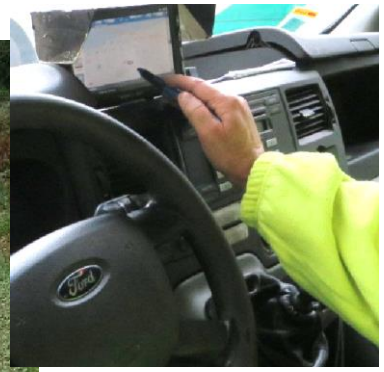
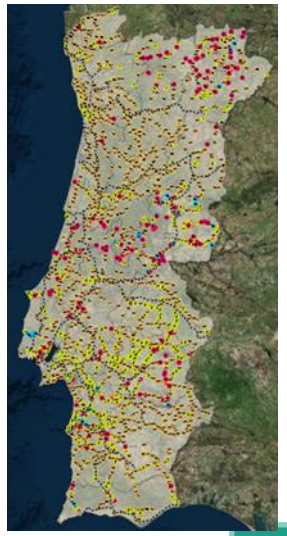
Implementation of mitigation measures

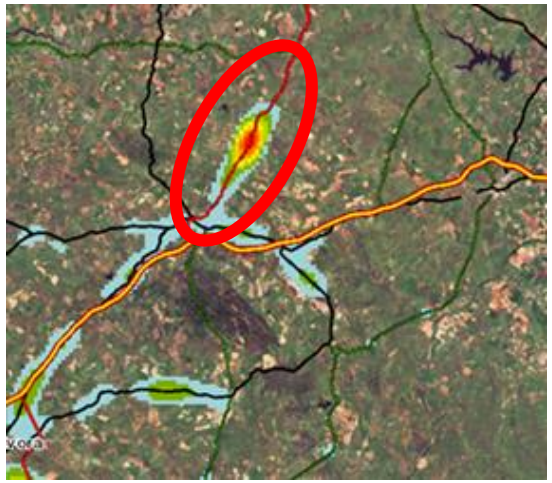
# 02 Monitoring wildlife mortality: IP's national program



Road inspectors

- Data collection
- GIS integration





Biologist

- Data validation and analysis
- Mitigation measures definition
- Intervention priorities

Project team

Operation and Maintenance Teams

- Mitigation measures execution

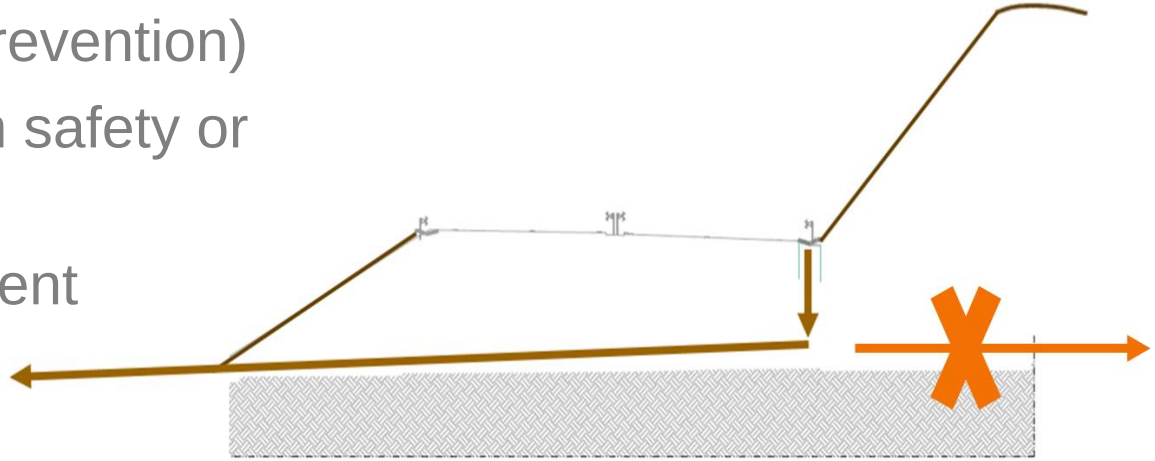
IP

## Constraints on data collection:

- Underestimation of smaller animals
- Differences in sampling effort
- Differences in sampling frequency
- Difficulty in identifying uncommon species


## Constraints in the application of solutions

- Difficulty in applying measures at some hotspots
  - Incompatibility with project
  - Incompatibility with other measures or laws (*e.g.* trees ‘screens’ *vs*. legislation of fire prevention)
  - Incompatibility with safety or road features
  - Excessive investment

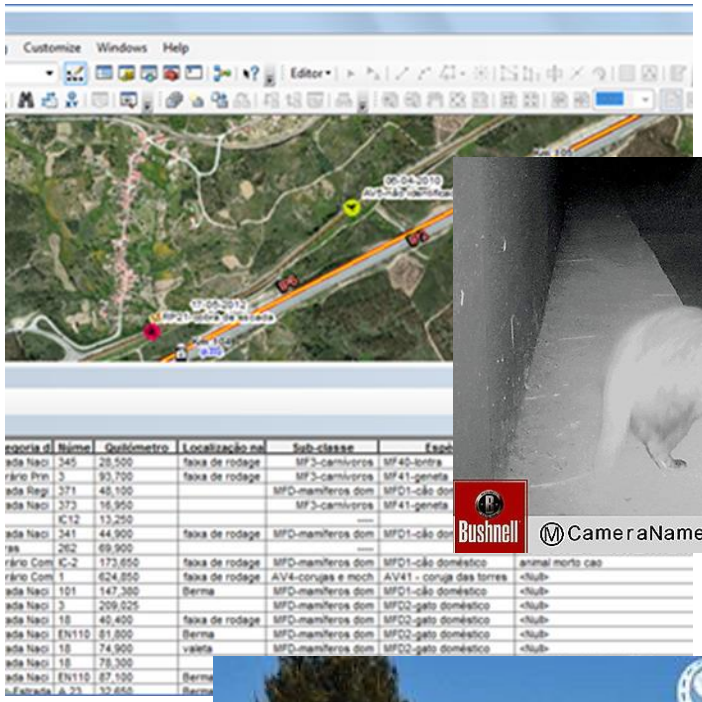


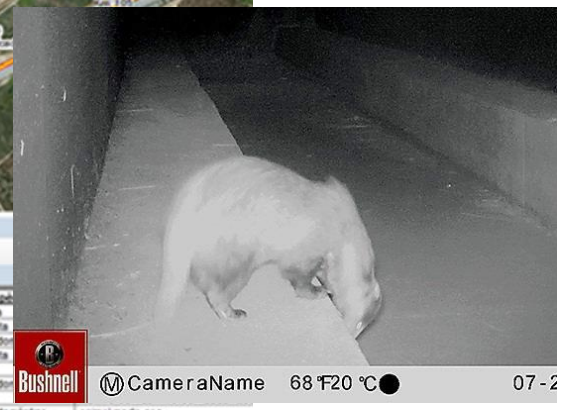
# Constraints in the application of solutions

- Interference from private owners

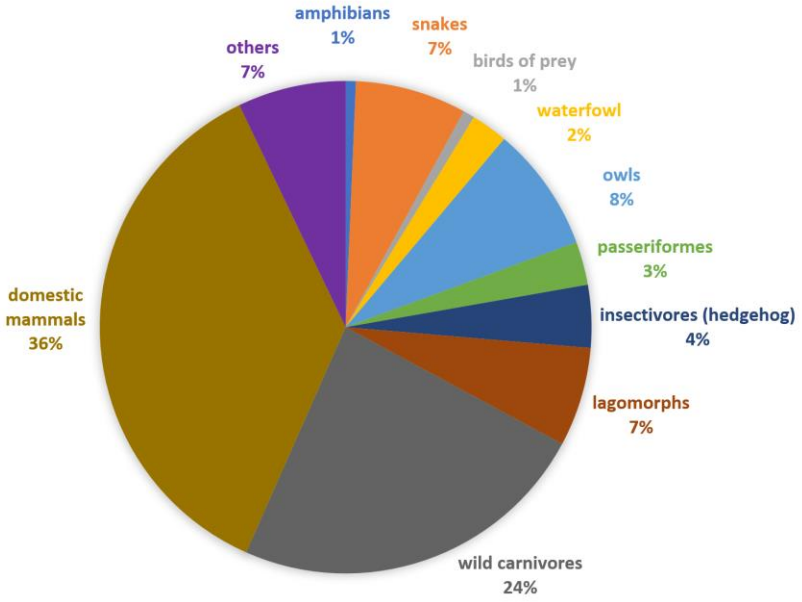
## Opportunities

- National scale and long-term project
- Possibility to conduct studies on time and spatial patterns of mortality
- Contribution to the knowledge of the species distribution
- Identification of frequent hotspots over time
- Implementation of adequate measures (considering target species and the most appropriate locations)
- Considering preventing measures in the projects (new roads or improvement /maintenance of roads)
- Monitoring the effectiveness of minimization measures
- Collaboration with other entities, investigators and European projects

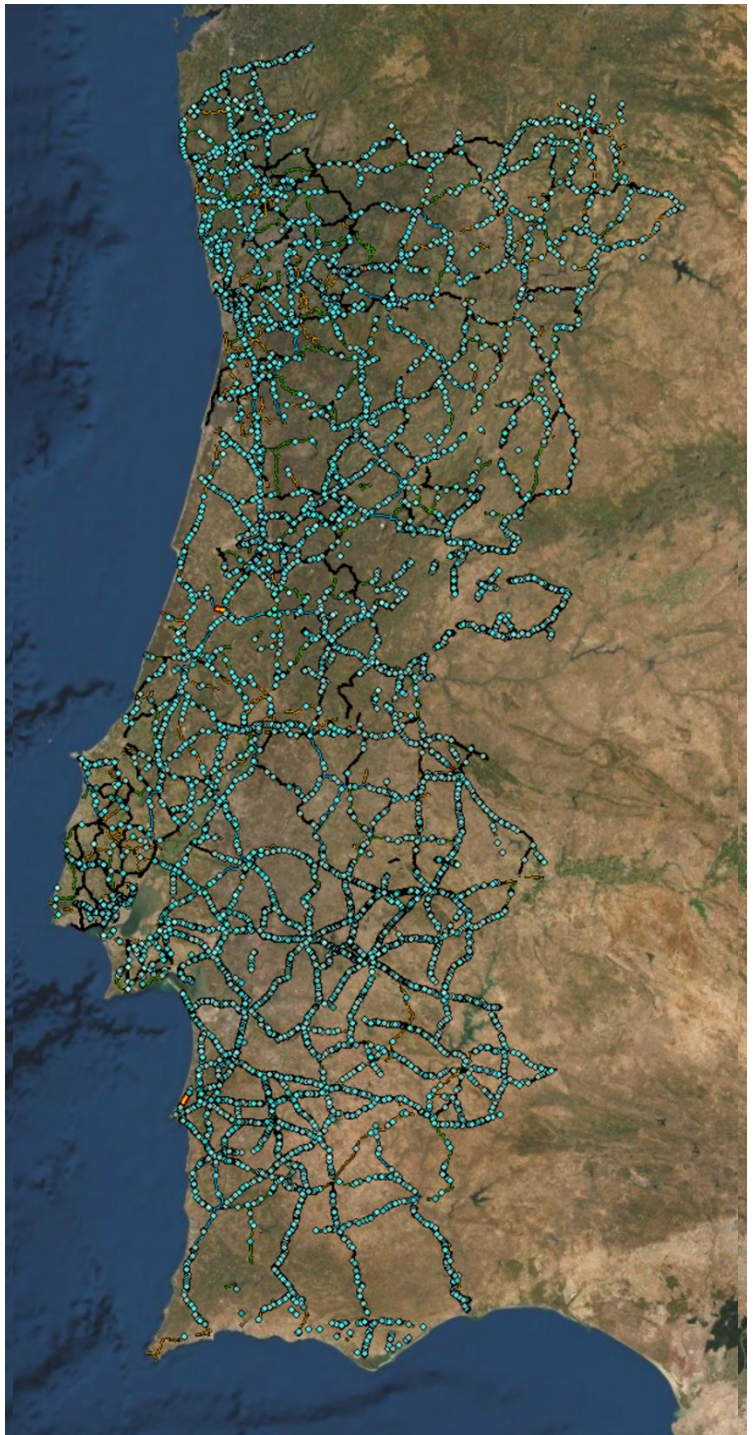



## Main Results




- Most affected species are relatively common, have a wide distribution throughout the country and do not have unfavorable conservation status



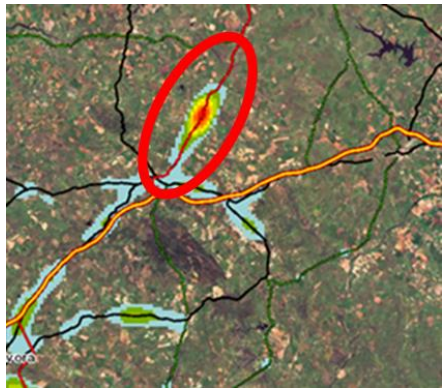
11 years of data:

- over 26 000 records

# Solutions applied

IP conducts analyses to find each year the most critical / priority areas:

- Hotspots, especially if repeated
- Ecological value of affected species



Definition of solutions, considering the target species, the typology of existing structures and the opportunity to act.

- **Dry ledges in hydraulic passages / culverts**

# Solutions applied

- Proper fences, placed in order to circumvent the passages and guide the animals
- Implementation of an additional small mesh net placed in "L" shape

# Solutions applied

- Speed limitation signaling
- Specific road signs for Iberian Lynx and Amphibians
- Speed reducing chromatic bands
- System for speed control
- Mowing / cutting vegetation along the road (reduction of preys at the grassy road verges)





## Solutions applied

- Barriers for raising the flight
- Placement of tight mesh metal nets on the slopes to prevent their colonization by rabbits
- Reflectors for light deflection of headlights to produce a warning effect in owls
- Barriers for amphibians

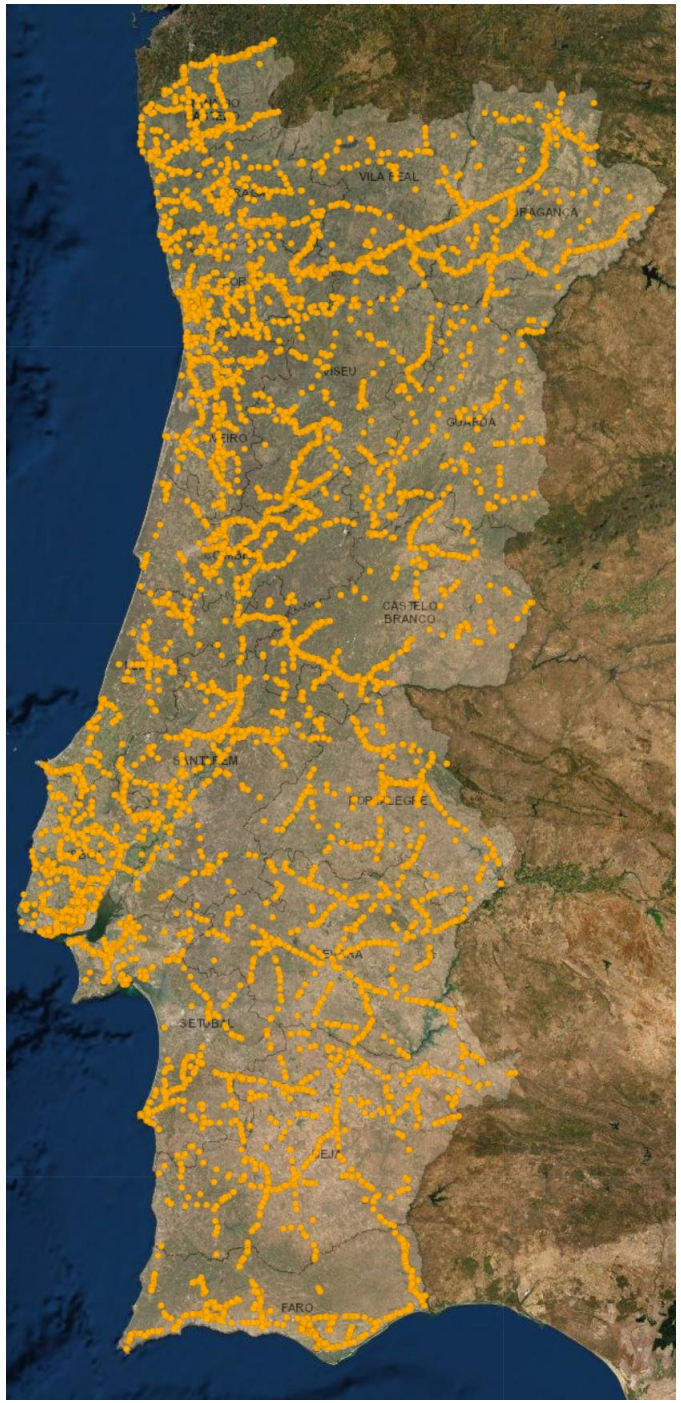
(LIFE LINES Project)

## 05 Final considerations

- Due to its spatial and temporal amplitude, the monitoring program of IP has increased the knowledge of the fauna mortality on roads and has allowed the identification of priority areas where minimization measures are needed.

- Most of the Portuguese road net is already built, so the solutions need to be applied to existing roads and IP is concentrating his efforts in adapting or replacing existing structures whenever is possible.

- With this program, it will be possible to work on a defragmentation plan that will contribute to reduce the mortality impact.




- bridge
- viaduct
- tunnel
- underpass
- overpass
- culvert > 2 m

## 05 Final considerations

- Where minimization measures have been implemented, there was a reduction in the mortality values. However, it is soon to assume the effectiveness of the measures and it is necessary to continue to monitor the evolution of mortality over the coming years.

- The known solutions to mitigate mortality may not be possible to implement due to constrains of different types. Articulation between project demands, human safety and biodiversity protection, along with a strategic, broad and integrated perspective, is the key to achieve optimized and viable solutions.



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# Thank you for your attention

graca.garcia@infraestruturasdeportugal.pt

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