

Effectiveness of amphibian mitigation measures to reduce roadkills in low traffic roads

Tiago Pinto
Luis Guilherme Sousa
André Oliveira
António Mira





Introduction

Hypotheses

Methods

Results

Discussion

Energy transport
networks



@Snapwire

Railway
networks



@farallon

Irrigation
channels

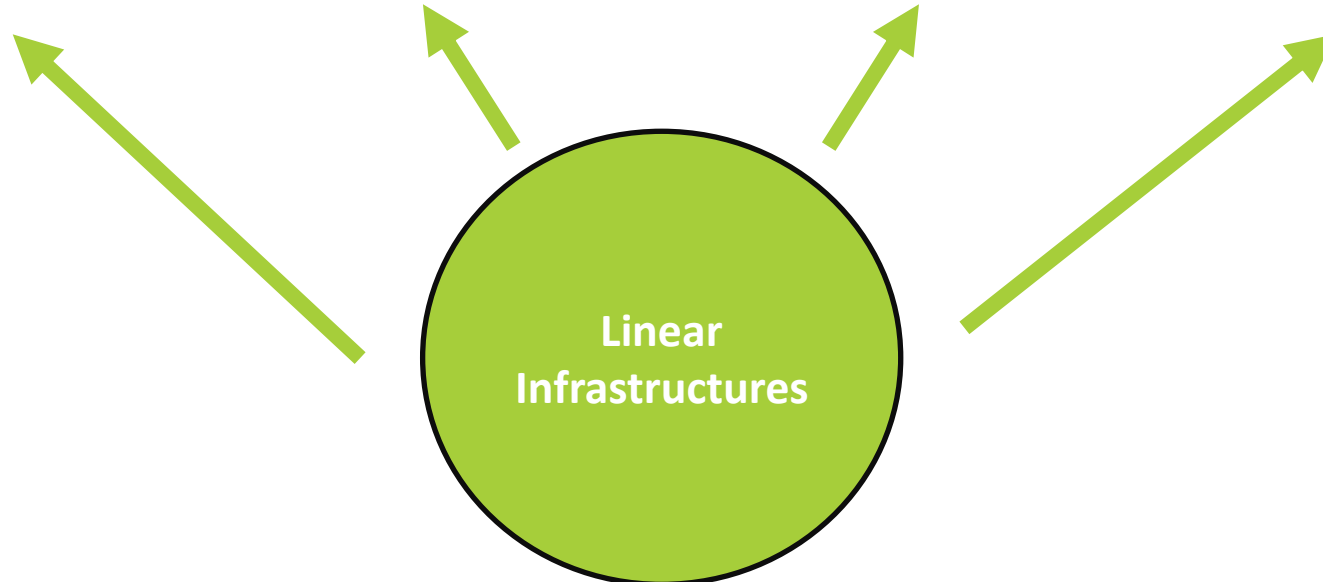


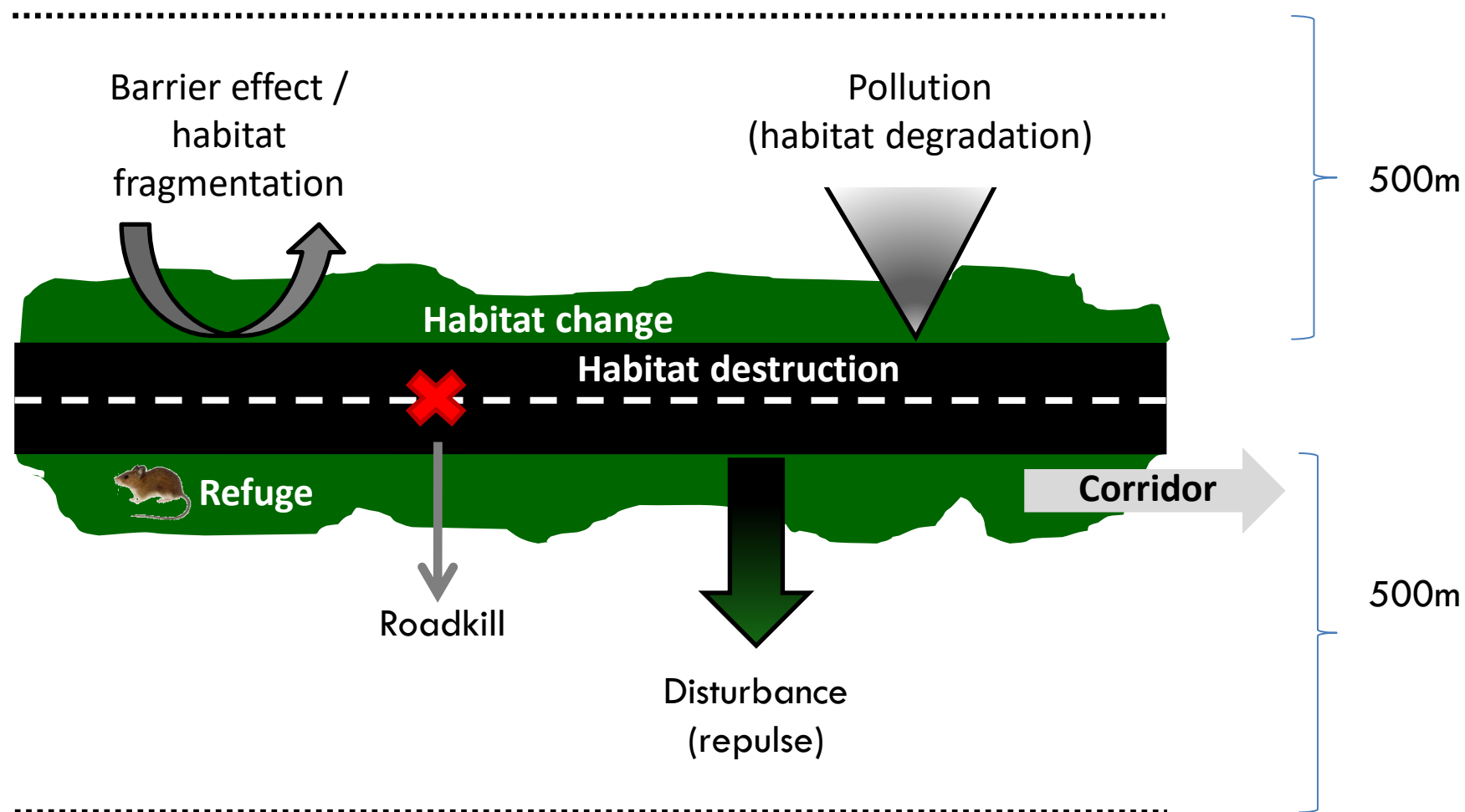
@mieszko

Roads



Linear
Infrastructures

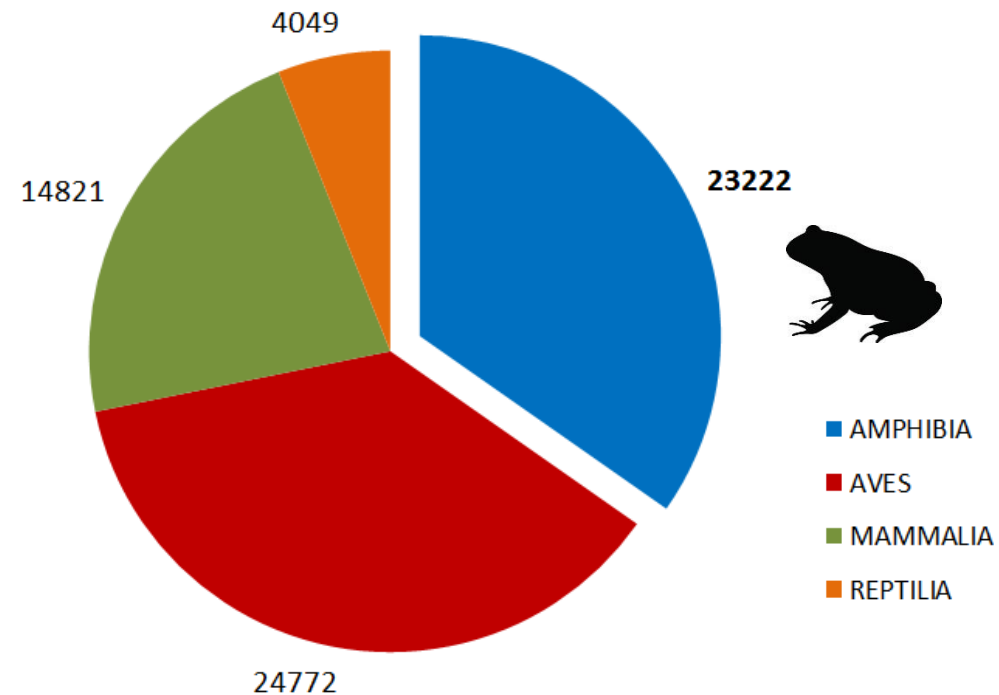




Why amphibians?

Most threatened vertebrate group on Earth

2nd most roadkilled group in LIFE LINES study area



Specific amphibian measures

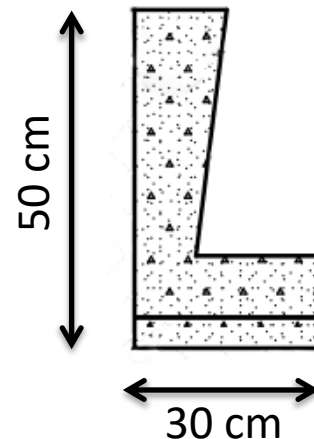
Under road Tunnels

ACO tunnels – safe cross from one side of the road to another



Barriers

New designed concrete and canvas guiding barriers to direct the animals towards the tunnels



Objective

Examine the effectiveness of amphibian mitigation measures in low traffic roads

Hypothesis

Amphibian mitigation measures (guiding barriers and specific under road tunnels) drastically reduce amphibian roadkill



Methodology

Night surveys by car at constant speed (30km/h)



BACI

Before measure implementation

- 2015
- 2016
- 2017

After measure implementation

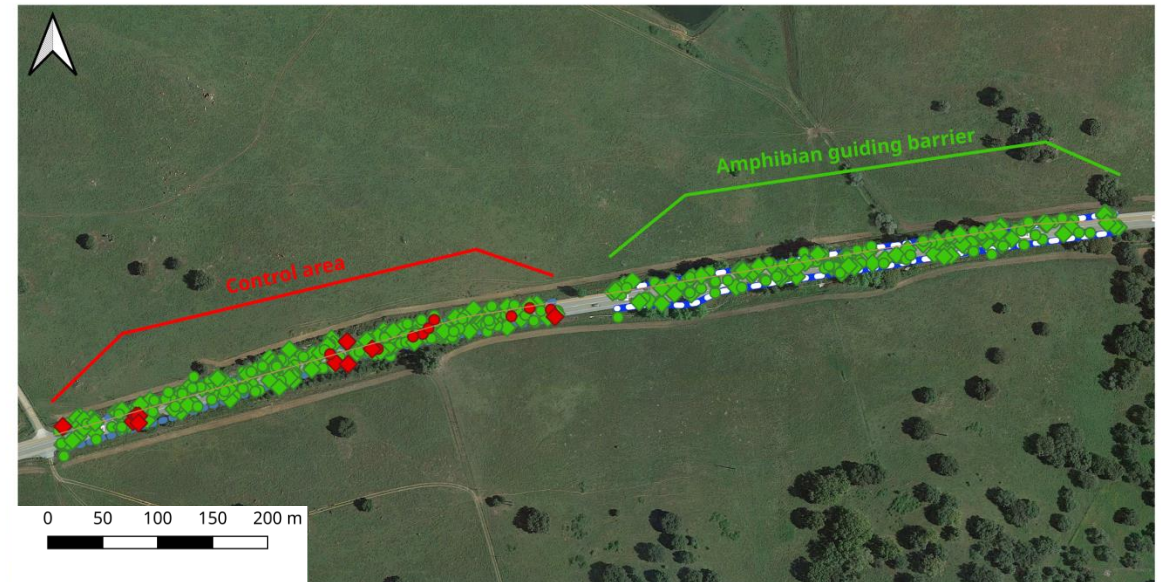
- 2018
- 2019
- **2020**

Record both dead and live amphibians



Methodology

Control areas with same landscape characteristics



Results

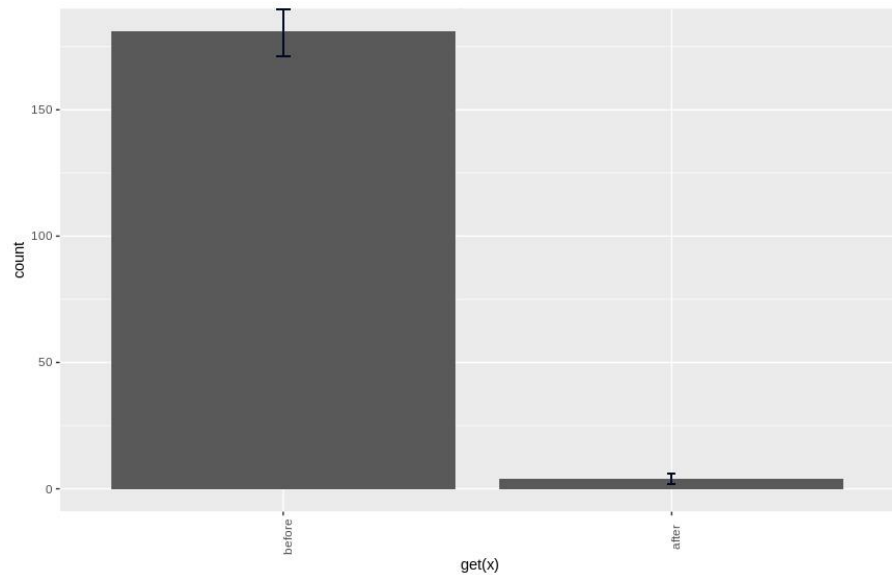


Figure 1. Amphibian mortality before and after measure implementation on road EM 535

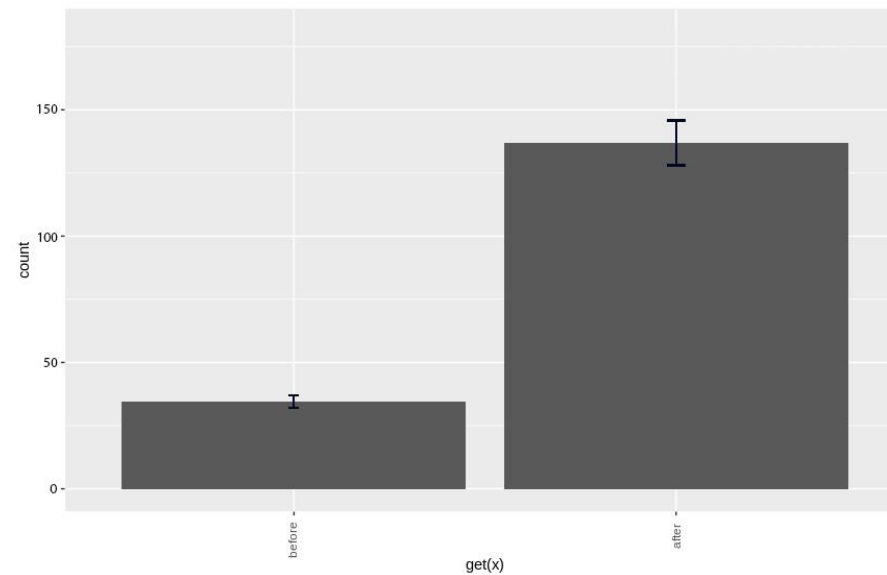


Figure 2. Amphibian mortality before and after measure implementation on road EM 535 (control areas)

Results

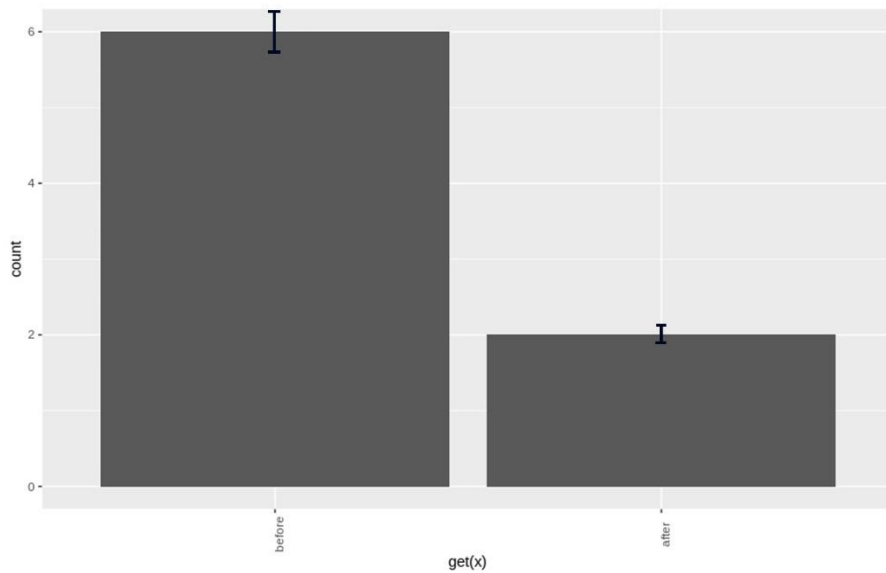


Figure 3. Amphibian mortality before and after measure implementation on road EM 529

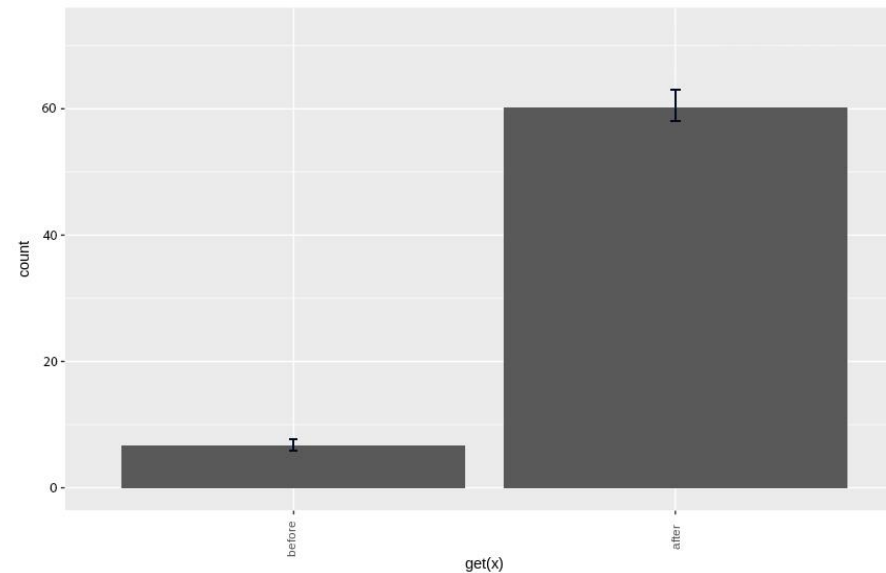


Figure 4. Amphibian mortality before and after measure implementation on road EM 529 (control areas)



Discussion

Low traffic roads can account for elevated amphibian mortality

Installed mitigation measures drastically reduced amphibian mortality in low traffic roads

Simple measures (e.g. canvas barriers) can be enough to strongly decrease amphibian mortality.



Thank you for your attention!!

© Francesco Valerio



LIFE LINES (LIFE14 NAT/PT/001081)
Linear Infrastructure Networks with Ecological Solutions
60% co-financed project by the LIFE - Nature and
Biodiversity Program of the European Commission

COORDINATING BENEFICIARY

ASSOCIATED BENEFICIARIES

