

Impact of roads on bird species



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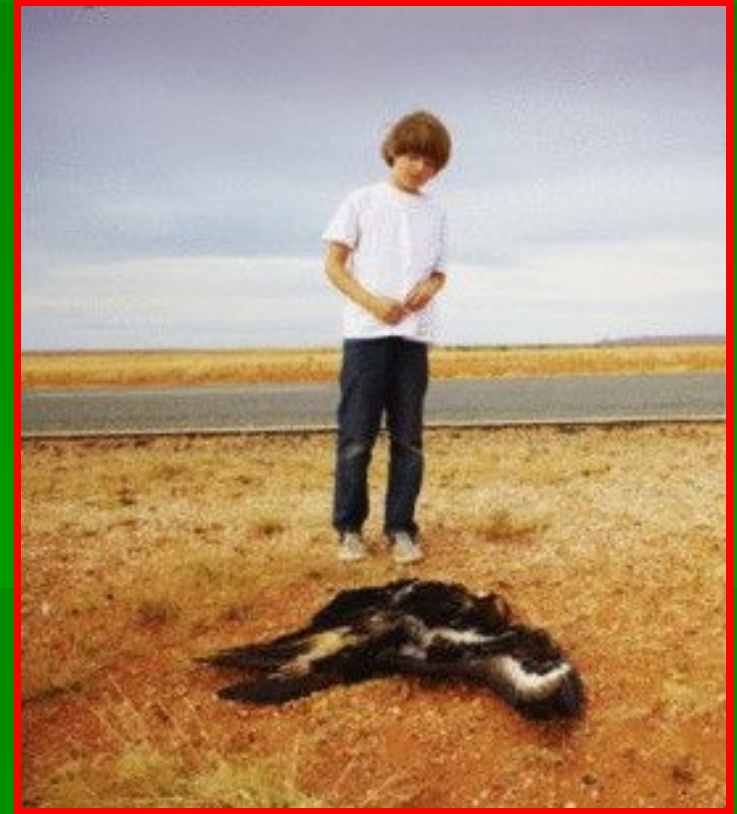
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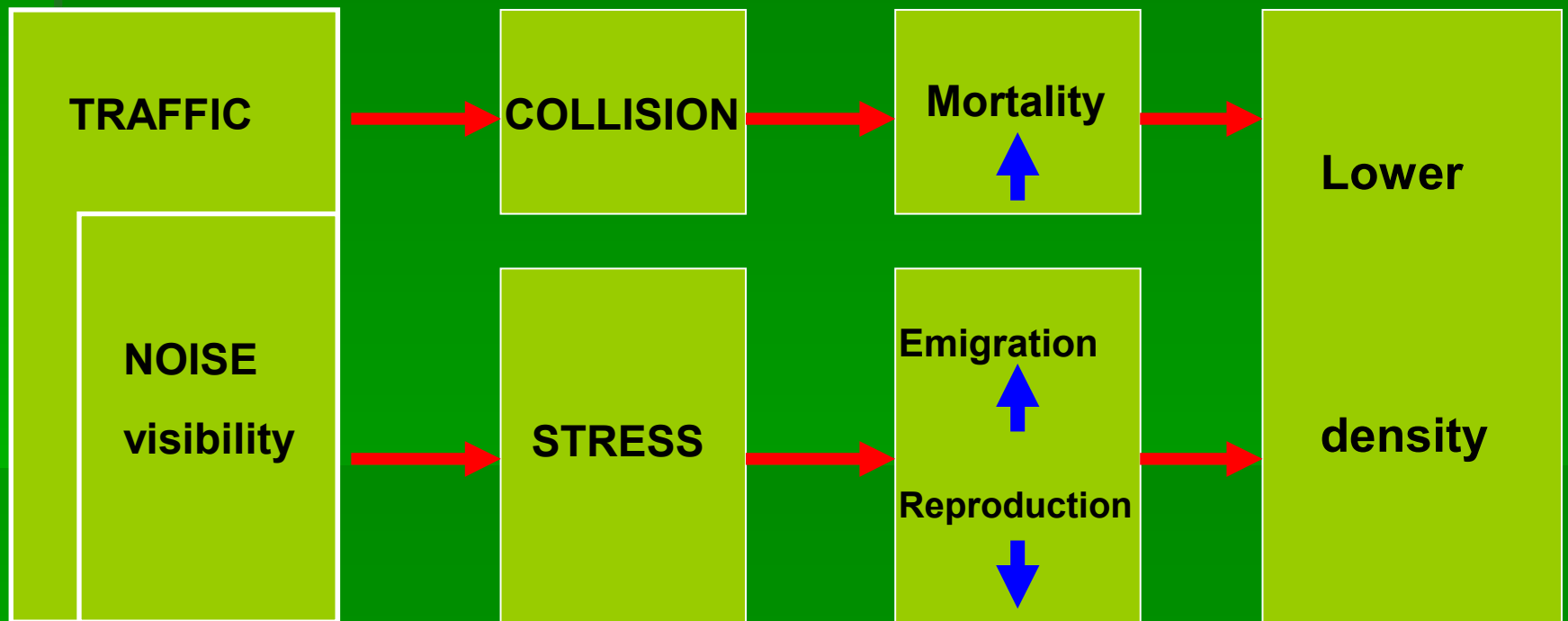


Primary effect of roads on birds

- ❖ Habitat loss due to infrastructure development
- ❖ Barrier effect – in birds mainly behavioral barrier
- ❖ Increasing mortality – collisions
- ❖ Disturbance – noise and visual (including lighting)



Possible relationship between traffic and breeding bird density



Roadkill – collision of birds with cars

- Well studied phenomenon
- Importance of causalities – no generally accepted standpoint
- Differences in conclusions – differences among species
- No question about the magnitude of the problem on global level



Roadkill – collision of birds with cars

- Reasons – why roads are attracting birds
 - Emergency hunting grounds
 - Edge effect – leading to concentrations
 - Breaking uniformity
 - Magnets for prey species
 - Continuous food source for scavengers
 - Often offers the only suitable breeding places
 - Specific microclimate



Roadkill – collision of birds with cars

- Numbers and species
 - Barn owl – roads cause local extinction and depletion of the population
 - Nightjar and Little owl – roads the most likely cause for negative population trends
 - Magnitude – examples USA (47birds/km²/year), Denmark (25birds/km²/year), Germany (26birds/km²/year)
 - Nocturnal, scavenger, very common and irruptive species



Roadkill – collision of birds with cars

Facts

- Speed is a major issue – higher speed → higher mortality
- Traffic density → no obvious relationship
- Weather has an influence
- Different species → different affected age groups



Habitat alteration due to disturbance

- Mainly noise and visual disturbance
- Well studied especially in the last decades
- No common standing point among researchers
- Some species are seriously affected
- Debate if all of them are affected or not
- Some argue that road-forest edges are attracting breeding birds



Habitat alteration due to disturbance

- No proof that high invertebrate densities are also characteristic to forest-road edges
- Noise and atmospheric pollutants
- Stronger human disturbance
- Increased mortality due to traffic
- Roadside increases predation due to attractiveness because of carrions

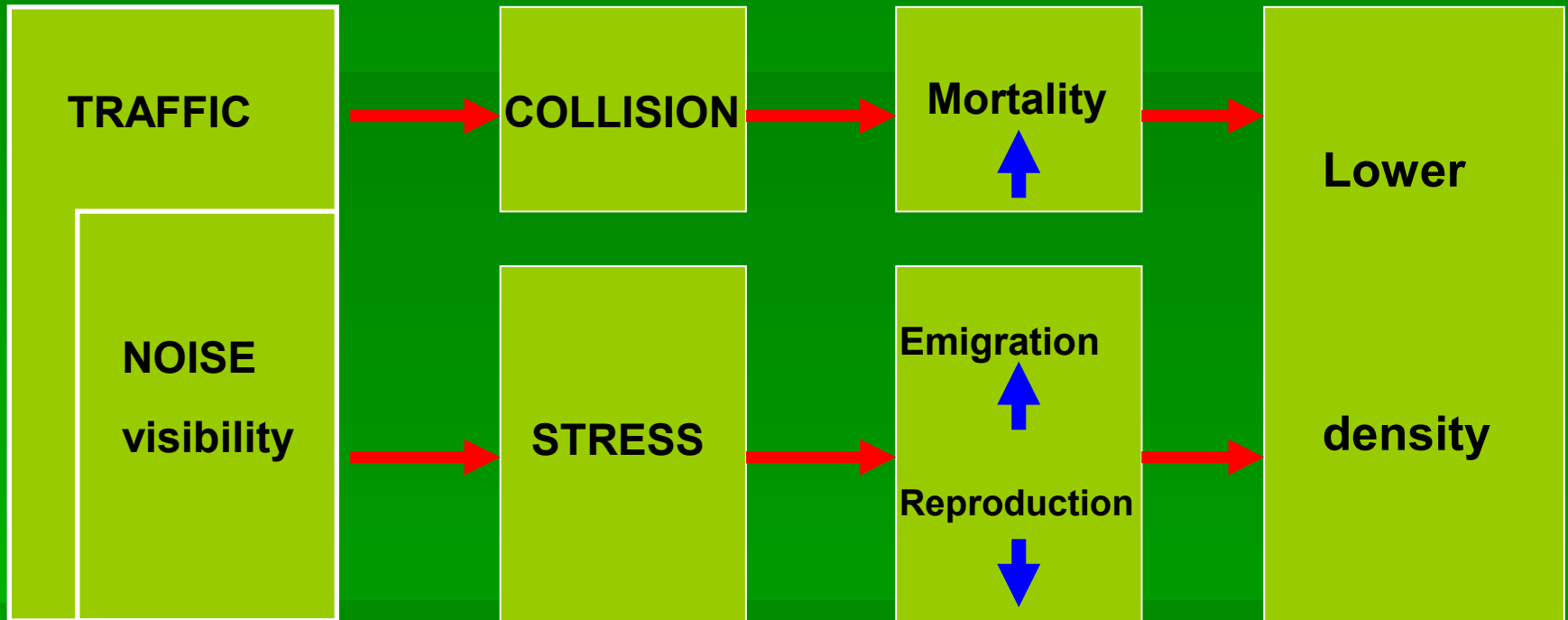


Habitat alteration due to disturbance

- Species and habitat types
 - Wetlands and grasslands much more affected
 - Road effect zone up to 3500m
 - Forests also seriously affected
 - Road effect zone up to 2800m
 - Waders were among the most affected
 - Rare and threatened species tend to be more affected
 - Impact may be masked for species with high breeding densities
 - Non-breeding sink populations



Summary of effects of roads on bird populations



Goals: **reduce attractiveness of roads**

reduce de dimensions of road effect zone

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Impact of roads on amphibians and reptiles

Primary impacts

- Habitat loss due to infrastructure development
- Barrier effect – the main impact
- Increased mortality



Impact of roads on amphibians and reptiles

Species and habitats

- Roads isolating living and reproductive or living and hibernating habitats
- Species with explosive reproduction biology
- Threat to public safety
- Unlike large mammals do not adapt to the new situations



Thanks for your attention!

