Roads and Urbanization

Christopher Ogle

Lecture Outline

- Impacts of roads on Amphibians
- Impacts of urbanization on Amphibians
- Future Direction

Outline of Road Impacts

- Roads as Barriers
- Road Mortality
- Possible Solutions
- Additional Problems with roads
Roads as Barriers
- Fragmentation
- Movement Barriers:
  - To breeding grounds
  - To more suitable habitat
  - To Life

Amphibian Decline
- Road Mortality coupled with habitat fragmentation is a potential contributor to amphibian declines

Road Mortality
- 95% of 10,515 road-kill animals were amphibians in one study.
- 1,671 were bullfrogs
- Many specimens were not identified
- Mass migrations to breeding grounds
- Bullfrogs are also predators of other species
Possible Solutions

- ???
- Drift fences utilizing existing culverts
- EcoPassage

Drift Fence

Ecopassage
PARC Ideas
- New roads minimized
- Take habitat and migration into account
- Minimize soil erosion
- Seasonal road closures

Additional problems with Roads
- Oil leaked from cars
- Exhaust from cars
- Others
- Salt (NaCl) used as a de-icer
  - See Abstract

Outline of Urbanization
- Major Problem
- Other Problems
- Possible Solutions
Major Problem
- Urbanization causes habitat loss and fragmentation, thus it is a potential factor in global amphibian declines

Other problems with Urbanization
- Contaminants
- Eutrophication
- Alterations in hydrology

Possible Solutions
- Natural areas
- Riparian zones, wetlands, and other special habitat
- Native species
- Garden pools
Possible Solutions
- Spay and neuter, and keep indoors

Future Research
- Know that it has a negative impact on Amphibians
- Don’t know much about solutions
- In the future focus on the impact of solutions

Questions?