

Predicting and Mitigating Reptile Road Mortality on the 1000 Islands Parkway

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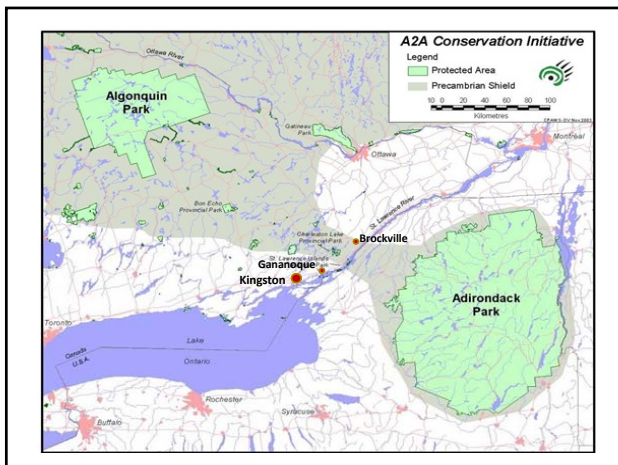





 Parks Canada
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About The 1000 Islands Parkway

- 37 km long, paved, two lane road
- Adjacent to St. Lawrence River between Gananoque and Brockville
- Speed limit is 80 km/h, except 1 km of 60 km/h
- Located within the Algonquin to Adirondack corridor and the Frontenac Arch Biosphere Reserve

Reptiles and the 1000 Islands Parkway

- **Snakes (9 species) and turtles (5 species)**
 - 3 SAR snakes: Gray ratsnake, milksnake and northern ribbonsnake
 - 4 SAR turtles: Blanding's, stinkpot, northern map, snapping
- Why road mortality risk?
 - Slow moving animals
 - Abundance next to water (St. Lawrence River)
 - Turtle nesting – prefer gravel/sand areas
 - Snake road basking
 - Potential driver bias – intentional collisions
 - Sex-bias in road crossing and vehicle collisions

Reptiles and the 1000 Islands Parkway

- 2008: "hot spot" road mortality study
- 2009: amphibian culvert experiment
 - 5 culverts each road barrier fencing, closed, and control culverts
 - Results indicate decreased amphibian road mortality
- **2010-2011: snake and turtle culvert experiment**
 - Same culvert design as previous year
 - Additional control culverts?
 - Monitor with motion sensed digital camera and bicycle survey

Snakes and Turtle Road Mortality Additional Research Questions

- Are certain microhabitat features associated with culvert use by snakes and/or turtles?
 - Light permeability
 - Wet/dry culverts
 - Air temperature
 - Substrate type
 - Distance of vegetation to culvert opening
- Are the same road mortality relationships with landscape variables and/or culvert microhabitat variables be found on other roads?
 - Snakes killed in low lying areas, near vegetated areas (forest), and near water areas and wet culverts
 - Turtles were simply related to wetland habitat

Snakes and Turtle Road Mortality Additional Research Questions

- Are more males or females of a species found as road kill?
- If female, are they more likely to be gravid (before or after laying eggs)?
- How quickly do snakes and turtles cross the road?
 - Is there a difference between gravid females and not gravid females/males?
- At what angle to snakes and turtles cross the road?



Questions?
Suggestions?

