

## **A REVIEW OF THE BROAD EFFECTS GENERATED BY ROADS ON HERPETOFAUNA**

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### **Abstract**

Although, several reviews, bibliographies, and texts describing the effects of roads on natural systems have been published, amphibian and reptile taxa remain underrepresented.

An array of studies document that roads generate ecological disturbance and destruction at multiple scales across the landscape. As conflicts between roads and wildlife become increasingly common, experts seek to understand the interactions in the search for solutions. Although, several reviews, bibliographies, and texts describing the effects of roads on natural systems have been published (Andrews 1990, Forman and Alexander 1998, Trombulak and Frissell 2000, Forman et al. 2003, White and Ernst 2003) amphibian and reptile taxa remain underrepresented. The extent of the direct and indirect effects of roads on these species has been revealed in numerous studies, with excessive rates of mortality (thousands) documented, and changes in behavior, movement, survival, growth, and reproductive success of individual animals reported. Cumulatively, effects may incur population-level consequences, or influence the overall species richness and diversity in an area. The goals of this presentation are to: 1) provide examples of physiological, ecological, and behavioral traits inherent among herpetofauna that enhance their susceptibility to environmental changes associated with development and roads, 2) summarize the prevalence of direct mortality data for herpetofauna, 3) identify the diversity of indirect effects documented in the literature, 4) infer larger-scale impacts on population and community levels, 5) recommend areas of future research that are to date undocumented, but for which herpetofauna are likely susceptible, and 6) present proactive approaches for addressing conflicts.