

STUDIES OF ROAD EFFECTS ON SMALL VERTEBRATES IN SOUTHERN CALIFORNIA, USA.

Cheryl S. Brehme and Robert N. Fisher, Western Ecological Research Center, U.S. Geological Survey.

We assessed the abundance and movement patterns of small vertebrates in relation to three types of roads transecting coastal sage scrub habitats: unimproved dirt, secondary paved, and a primary highway. For each road type, we established 8 paired trapping arrays at two distances from the road and tracked movements near the road using fluorescent dye. The bulk of data were generated for three small mammal and two lizard species. There was little effect of distance from road on relative abundances of most species. In general, dirt roads did not impede or increased movement, while the primary highway was a significant barrier. Movements in relation to the secondary paved road differed among species. Overall, we found that species with open microhabitat preferences were more likely to venture out onto roads and those that did suffered increased mortality due to vehicular traffic. Secondly, we conducted a road mortality study on 10 different roads totaling 94 km. Repeat surveys were conducted at different times and environmental conditions. Species composition differed greatly between day and night surveys. We also documented a two-fold increase of dead animals at night and over a 25-fold increase on wet nights, particularly frogs and toads. Conservation and management implications of these studies are discussed.