
HOW WILL WILDLIFE CROSSINGS MITIGATE ROADS FOR WILDLIFE IN THE FACE OF CLIMATE CHANGE?

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This paper will address the developing trends in wildlife crossing structure research across the western U.S. and along US 93 South in Montana. This discussion may help to better design and retrofit structures to facilitate wildlife movement in the face of climate change. The objectives of our wildlife crossing structure research across the west are to determine wildlife use of crossing structures and structure designs that work best in passing large and medium mammals. Many of today's wildlife crossing structures and existing culverts and bridges along roadways were designed before the science of transportation ecology had developed enough to understand what designs worked for different species. Our method of evaluating these new and existing structures is to place motion-sensed camera traps 10 m from the entrances to the culverts and bridges to monitor wildlife reactions to the structures. Wildlife approaches, successful passages through the structure, and repels away from the structure are tallied for every individual. Species' reactions to culverts and bridges differ. White-tailed deer are willing to use many different sized culverts and bridges, while mule deer are more cautious. Carnivores use structures of all types, although the landscape factors such as human development may play a role in their willingness to use some structures. These and other results have greater implications for species adaptations to climate change: it will be critical that roads be permeable for the entire suites of species in an area as they need to move to adapt to changing conditions.