Effectiveness of Fences and Undercrossings to Mitigate Deer-Vehicle Collisions on Interstate 80 in Eastern Nebraska

Aaron M. Hildreth, William L. Lawyer III and Scott E. Hygnstrom
School of Natural Resources, University of Nebraska-Lincoln, Lincoln, Nebraska

Brian L. Johnson
Interstate Design, Nebraska Department of Roads, Lincoln, Nebraska

Kurt C. Vercauteren
USDA-APHIS WS, National Wildlife Research Center, Fort Collins, Colorado

ABSTRACT: The Nebraska Department of Roads (NDOR) recently reconstructed a portion of Interstate 80 in eastern Nebraska between Lincoln and Omaha. Within a 12-mile stretch of the Interstate near the Platte River, DVCs ranged from 2.6-4.2 per mile per year and are among the highest in the state. As part of the reconstruction effort, 4 underpasses were modified to improve wildlife access and use in an effort to minimize DVCs. Fences were constructed along a 4-mile stretch encompassing all 4 underpasses to help funnel deer away from the roadway and toward the underpasses. The goal of this project was to evaluate the effectiveness of fences and underpasses in reducing DVCs and associated impacts on human and wildlife populations in the I-80 corridor where it crosses the Platte River.

We installed motion-activated cameras and monitored wildlife use of underpasses from May 2009-December 2012. We installed cameras at the ends of fence wings upon completion of fence construction in November 2011 and monitored them through December 2012. Data on road killed deer was collected by NDOR from May 2009-December 2012.We observed approximately 12,000 individual deer using underpasses from May 2009-December 2012. From November 2011-December 2012, we observed roughly 600 deer circling fence wing ends. We recorded 77 road kill reports from May 2009-December 2012. The rate of road kills per month per mile decreased by 85% after completion of the fences, and we observed no increased rate of road kill at fence ends.

A combination of deer-proof fences and deer-friendly underpasses can be used by NDOR to reduce DVCs in select areas. Monitoring road kill and DVC data throughout the state can help determine collision hotspots. When roadways are being redesigned, modifications can be made to reduce collisions in problematic areas. Using fences in conjunction with underpasses will help maintain connectivity on the landscape that might be lost if fencing alone is used. Additional monitoring of the area and analysis of DVCs and road kills need to be completed prior to drawing final conclusions.

Key Words: deer-vehicle collision, interstate highway, Nebraska, underpass, white-tailed deer

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