

CENTER for LARGE LANDSCAPE CONSERVATION

Examples of the Effectiveness of Wildlife Crossing Structures with Fencing in Reducing Wildlife-Vehicle Collisions While Improving Habitat Connectivity

1. Wyoming- U.S. Highway 191, Trappers Point

Key Findings:

- By the third year following overpass and underpass construction, the total number of wildlife-vehicle collisions dropped by 81%.
- **Pronghorn-vehicle collisions were completely eliminated, a 100% reduction.**
- Mule deer-vehicle collisions were reduced by 79%.
- Back-and-forth movements increased by >60% for mule deer and >300% for pronghorn, suggesting that the crossing structures may enhance movement options and allow ungulates greater flexibility in finding forage.

Source: Sawyer, H., Rodgers, P. A., & Hart, T. (2016). Pronghorn and mule deer use of underpasses and overpasses along US Highway 191. *Wildlife Society Bulletin*, 40(2), 211-216.

2. Arizona- Highway 260

Key Findings:

- After construction of 6 crossing structures and wildlife-proof fencing, vehicle collisions with elk were reduced by **87%**.
- Furthermore, fencing in combination with a relatively high density of passages (1 structure/1.1 km) promoted elk highway permeability by funneling animals toward the underpasses where resistance to crossing was lower than that associated with crossings on the road surface.

Source: Dodd, N. L., Gagnon, J. W., Boe, S., & Schweinsburg, R. E. (2007). Role of fencing in promoting wildlife underpass use and highway permeability.

3. Colorado- Highway 9

Key Findings:

- Wildlife-vehicle collisions decreased progressively during the first two years of the study. Following the construction of Phase 2, the number of mule deer and elk carcasses dropped by 86% to a total of eight reported carcasses, down from the pre-construction 5-year average of 56.4 carcasses.
- Correspondingly, wildlife-vehicle crashes reported to law enforcement personnel decreased by 70%, to just three crashes, during the first winter of monitoring (2015-2016).

Source: Kintsch, J., Cramer, P., Singer, P., Cowardin, M., & Phelan, J. (2018) State Highway 9 Wildlife Crossings Monitoring- Year 2 Progress Report. Colorado Dept. of Transportation Research Report 2018-06. Available at: <https://www.codot.gov/programs/research/pdfs/2018-Research-Reports/2018-06/view>

4. Wyoming- U.S. Highway 30, Nugget Canyon

Key Findings:

- Underpass and fence installation effectively reduced DVCs by 81%. “Had fence gates remained closed and cattle guards clear of snow, DVCs could be eliminated altogether.” (Sawyer et al. 2013; page 492). The results suggest that underpasses, combined with game-proof fencing, improve highway safety for motorists while providing safe and effective movement corridors for large populations of migratory mule deer.

Source: Sawyer, H., Lebeau, C., & Hart, T. (2012). Mitigating roadway impacts to migratory mule deer—a case study with underpasses and continuous fencing. *Wildlife Society Bulletin*, 36(3), 492-498.