
THE SUITABILITY OF LARGE CULVERTS AS CROSSING STRUCTURES FOR DEER

Jeremiah Purdum, Western Transportation Institute, Montana State University, P.O. Box 17883
Missoula, Montana 59808, jepurdum@gmail.com

Marcel P. Huijser, Western Transportation Institute, Montana State University, P.O. Box 174250
Bozeman, Montana 59717-4250, mhuijser@coe.montana.edu

Whisper Camel, Confederated Salish and Kootenai Tribes, P.O. Box 278, Pablo, Montana 59855,
whisperc@cskt.org

Len Broberg, Environmental Studies Program, University of Montana, Jeanette Rankin Hall 106A,
Missoula, Montana 59812-4320, len.broberg@mso.umt.edu

Pat Basting, Montana Department of Transportation, P.O. Box 7039

Missoula, MT 59807-7039, pbasting@mt.gov

Most researchers that have investigated the use of wildlife crossing structures have done so through counting the number of animals present in the structures or the number of animals that crossed the road using the structures. However, we argue that crossing structure acceptance, as a percentage of all approaches, is a better measure of suitability. Once the acceptance of certain types and dimensions of crossing structures is known for different wildlife species, agencies can select crossing structures that meet certain goals. We used this method for one particular type of crossing structure; large diameter culverts. We placed wildlife cameras (Reconyx™) at the entrance of nine corrugated metal arched culverts located along US Highway 93 on the Flathead Indian Reservation, Montana; to capture approach behavior. We specifically examined the number of successful and aborted crossing attempts. White-tailed and mule deer were the most frequently observed species and had an acceptance rate of 84 percent (n = 455) and 66 percent (n = 56) respectively. Only 49 percent (n = 426) of the groups that passed the structures successfully showed an alert posture versus 93 percent (n = 98) for the groups that aborted the attempts. The two deer species showed slightly different levels of alertness with an alert posture for 55 percent of white-tailed deer (*Odocoileus virginianus*) events and 68 percent for mule deer (*O. hemionus*) events for all crossing attempts combined. The data show that wildlife acceptance rates and behavior at structures can vary between species and data on varying structure type and dimensions will add to our understanding of structure acceptability for various target species.