THE SUITABILITY OF LARGE CULVERTS AS CROSSING STRUCTURES FOR DEER

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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.