







Wildlife Jump-outs

Marcel P. Huijser, PhD Samantha C. Getty, BSc Western Transportation Institute



Wildlife jump-outs or escape ramps



Wildlife Vehicle Collision Reduction and Habitat Connectivity Pooled Fund Study, TPF-5(358)

REDUCE Wildlife Vehicle Collisions INCREASE Habitat Connectivity



The Study Area



Wildlife Vehicle Collision Reduction and Habitat Connectivity Pooled Fund Study, TPF-5(358)

REDUCE Wildlife Vehicle Collisions INCREASE Habitat Connectivity



Historic use US Hwy 93

- 32% use by mule deer
- 7% use by white-tailed deer

(Huijser et al. 2016)





		Hei	ght
Area	#	ft	cm
Evaro	14	6' 8.5"	204
Evaro	17	6' 0''	183
Evaro	19	6' 8''	203
Evaro	20	6' 0''	183
Evaro	21	6' 1.5''	187
Evaro	23	5' 6''	168
Ravalli Hill	26	5'11"	180
Ravalli Hill	27	6' 0''	183
Ravalli Hill	28	5' 9''	175
Ravalli Hill	29	5'11"	180

WILDLIFE VEHICLE COLLISION REDUCTION AND HABITAT CONNECTIVITY Pooled Fund Study, TPF-5(358)

Wildlife Vehicle Collisions

REDUCE

INCREASE Habitat Connectivity



Lower jump-outs

- Face 5 ft
- Bar 18 inches above surface
- 10 jump-outs
- 4 in area with mule deer
- 6 in area with white-tailed deer



Assistance from MDT

WILDLIFE VEHICLE COLLISION REDUCTION AND HABITAT CONNECTIVITY Pooled Fund Study, TPF-5(358)

REDUCE Wildlife Vehicle Collisions INCREASE Habitat Connectivity



Prototype bar



Wildlife Vehicle Collision Reduction and Habitat Connectivity Pooled Fund Study, TPF-5(358)

REDUCE Wildlife Vehicle Collisions INCREASE Habitat Connectivity









utions



Cost Effective Solutions



Final bar design



Wildlife Vehicle Collision Reduction and Habitat Connectivity *Pooled Fund Study, TPF-5(358)*

REDUCE Wildlife Vehicle Collisions INCREASE Habitat Connectivity







Cost Effective Solutions











ions





Cost Effective Solutions





Cost Effective Solutions









Experiment



Wildlife Vehicle Collision Reduction and Habitat Connectivity Pooled Fund Study, TPF-5(358)

REDUCE Wildlife Vehicle Collisions INCREASE Habitat Connectivity



Overall

* • • ·		Jump	Jump	In	In	Jump	Jump
		down	up	r-o-w	Habitat	down	up
Species	Total	(N)	(N)	(N)	(N)	(%)	(%)
White-tailed deer	341	4	0	73	268	5.48	0.00
Mule deer	153	52	5	81	72	64.20	6.94
Bear black	37	14	2	21	16	66.67	12.50
Coyote	23	4	0	19	4	21.05	0.00
Bobcat	21	10	5	16	5	62.50	100.00
Elk	7	1	0	1	6	100.00	0.00
Mountain lion	6	3	3	3	3	100.00	100.00
Red fox	2	1	0	2	0	50.00	N/A
Moose	1	0	0	0	1	N/A	0.00
Raccoon	1	0	0	1	0	0.00	N/A
Wolf	1	1	0	1	0	100.00	N/A

Table 4: The overall effectiveness of the lowered jump-outs in allowing species to jump down (desired behavior) and jump up (undesired behavior).

Wildlife Vehicle Collision Reduction and Habitat Connectivity Pooled Fund Study, TPF-5(358)

REDUCE Wildlife Vehicle Collisions



White-tailed deer



WILDLIFE VEHICLE COLLISION REDUCTION AND HABITAT CONNECTIVITY Pooled Fund Study, TPF-5(358)

REDUCE Wildlife Vehicle Collisions INCREASE Habitat Connectivity



Mule deer



WILDLIFE VEHICLE COLLISION REDUCTION AND HABITAT CONNECTIVITY Pooled Fund Study, TPF-5(358)

REDUCE Wildlife Vehicle Collisions













utions

Balance Jump down vs. Jump up

26 (52/2) more mule deer escaped from the fenced road corridor, while "only" 5 more mule deer entered the fenced road corridor, resulting in a "net benefit" of 21 mule deer which were no longer in danger of being hit by traffic



Step over that bar!

Table 5: The number of deer that successfully jumped down to the habitat side and with how many first stepped over the bar, if any.

		Individuals observed per treatment (N)				
		Height - Setback				
Species	Step over bar	18 - 4	18 - 12	18 - 15	15 -12	
White-tailed deer	no step over					
	step over, 1 leg					
	step over, 2 legs		1			
	step over, 3 legs					
	step over, 4 legs					
Mule deer	no step over	3	1	12	1	
	step over, 1 leg			4		
	step over, 2 legs		2	26		
	step over, 3 legs					
	step over, 4 legs			1		



Wildlife Vehicle Collision Reduction and Habitat Connectivity Pooled Fund Study, TPF-5(358)

REDUCE Wildlife Vehicle Collisions INCREASE Habitat Connectivity



Conclusions

White-tailed deer

- No improvements
- Further experiments needed! Funding?

Mule deer

- At least doubled effectiveness
- Some jumped-up, but still a strong net benefit

