Slater, S. J. and J.P. Smith. 2010. Effectiveness of Raptor Perch Deterrents on an Electrical Transmission Line in Southwestern Wyoming. Journal of Wildlife Management 75(5):1080-1088.

Abstract In sagebrush–steppe and other open habitats, power lines can provide perches for raptors and other birds in areas where few natural perches previously existed, with potential negative impacts for nearby prey species, such as greater sage-grouse (Centrocercus urophasianus). Between September 2006 and August 2007, we used driving surveys, behavioral-observation surveys, and prey-remains surveys to assess the ability of perch-deterrent devices to minimize raptor and common raven (Corvus corax) activity on a recently constructed transmission line in southwestern Wyoming. All survey methods demonstrated that activity was significantly lower on the deterrent line compared with a nearby control line; however, deterrent devices did not entirely prevent perching. Considering use of cross-arms or pole-tops alone, we sighted 42 raptors and ravens on the deterrent line and 551 on the control line during 192 driving surveys of each line. Golden eagles (Aquila chrysaetos) and ravens were the species most commonly observed successfully overcoming deterrent devices. Smaller rough-legged hawks (Buteo lagopus) regularly avoided deterrents by perching on conductors (i.e., wires). We documented much off-line activity near both survey lines and suggest that fewer birds near the deterrent line likely reflected reduced availability of nearby alternate perches. There was a pronounced winter peak in on-line perch use, with the effect more evident on the control line. Behavior surveys corroborated our driving-survey results but were otherwise unproductive. During 549 prey-remains surveys of each line, we found 9 single and 60 grouped prey items near deterrent-line poles, compared with 277 single and 467 grouped items near control-line poles. We observed few sage-grouse in the study area but did witness a likely power line–related, raptor-caused sage-grouse mortality. Overall, our results suggest that perch-deterrent devices can reduce raptor and raven activity\on power-line structures, but to determine their utility on entire power-line segments, we suggest managers consider 1) what level of reduction in perch activity is worth the cost, and 2) the availability of alternate perches in the surrounding landscape.