
ASSESSING IMPACTS FROM ONE YEAR OF MONITORING AT A WIND FARM IN CENTRAL MONTANA

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In 2015, NorthWestern Energy, owner of Spion Kop Wind Farm, contracted Montana Fish, Wildlife and Parks to assess impacts on birds and bats and formed a Technical Advisory Committee to guide research and monitoring. An explicit objective was to ensure all methods and results are publicly available. We searched turbines weekly May-September, 2016 for mortalities, assessed eagle use via point counts year-round and the Montana Natural Heritage Program deployed acoustic bat detectors to record echolocation sequences for activity. Estimates of fatality were determined by adjusting raw carcass counts for bias using the Huso (2011) Fatality Estimator software. Bat activity and species presence were quantified through analysis of call sequences. We observed three Golden Eagles, *Aquila chrysaetos*, on counts

for a total of 3 eagle use minutes. We found carcasses of two Western Meadowlarks, *Sturnella neglecta*, 15 Hoary Bats, *Lasiurus cinereus*, and five Silver-haired Bats, *Lasionycteris noctivigans*. The mean bird fatality estimate was 14 (95% CI: 9-20) and for bats 221 (95% CI: 120-397). An estimate of raptor fatality is of interest, but since no raptor fatalities were encountered we used the Huso (2014) Evidence of Absence (EOA) software to assess likelihood of a raptor collision. We can assert with 95% credibility that no more than 3 raptors were killed at the site. Impacts to birds are low relative to other wind farms in the west. The observed bat fatality rate (5.5 bats/MW) is below the average but above the median fatality rate observed at 49 wind farms in the mid-west.