

The Emerging Conflict of Common Ravens Roosting on Transmission Line Towers

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Bird interactions with power lines can cause faults, which are a disruption of electrical service. Faults of unknown origin on 500kV transmission lines in central Montana, which are integral to the Northwest US power grid, became an operational concern during winter 2016–2017. In 2017 we found tower insulators heavily contaminated with bird droppings and discovered a large nocturnal roost of common ravens (*Corvus corax*). We summarized fault data from the Energy Management System and raven abundance data from the Billings Christmas Bird Count to assess the potential impact of raven roosts on the transmission lines. We also conducted counts at seven roosts during winter 2019–2020. We found a positive relationship between the number of faults reported and raven abundance from 2005–2020. The three largest roosts peaked at 1,000–1,500 ravens on single evenings. The number of faults during winter 2019–2020 decreased after installation of silicon-coated insulators and perch deterrents, and the periodic washing of insulators. Raven populations have increased significantly throughout their range and may cause similar conflicts for other electric utilities on large transmission lines. Long-term management of ravens will need to integrate approaches at both local and landscape scales.