Golden Eagle Migration Corridors along The Rocky Mountain Front and Intermountain Flyways

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Golden Eagles (Aquila chrysaetos) have been receiving increased attention in the western United States due to an increase in anthropogenic population threats, including wind and other industrial energy developments. Conservation of migratory Golden Eagles hinges on knowledge of threats within breeding ranges, migratory corridors, and over-wintering areas. Often, understanding threats along migration corridors can be difficult due to the short temporal use of migration paths and because pathways can often be dispersed across the landscape. We used satellite tracking data from three Golden Eagle studies across Montana to estimate key migration routes and bottlenecks for migratory Golden Eagles wintering or passing through Montana, with an emphasis on the Rocky Mountain Front. We gathered data from 35 individuals, including from 21 adult and 14 sub-adult Golden Eagles. We created individual dynamic Brownian Bridge Movement Models (dBBMM) for each migration event to estimate migratory pathways of individuals. We also created a population level migratory pathway estimate to determine key migration corridors and bottlenecks by summing the individual dBBMMs after accounting for age and study location. These models can be used for future risk assessments for developments and conservation measures for Golden Eagle migration routes.