
ESTIMATING SURVIVAL AND DETERMINING CAUSES OF MORTALITY OF GOLDEN EAGLES IN SOUTH-CENTRAL MONTANA

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There is concern for golden eagles (*Aquila chrysaetos*) in the West as a result of contradictory population trend estimates and a likely increase in threats including but not limited to expanded wind energy development. Estimating survival of golden eagles and identifying causes of mortality can be used to assess the viability of nesting golden eagle populations and to direct mitigation efforts if necessary. To date, little information exists on golden eagle survival in western North America. In addition, identified causes of golden eagle mortality are often associated with an opportunity to find dead birds, creating a potential

bias that may be minimized with the use of satellite telemetry. We outfitted 17 adult and 13 nestling golden eagles with satellite transmitters during the 2011-2014 nesting seasons near Livingston, Montana to estimate survival and determine causes of mortality. We used multi-state models to estimate survival over discrete-time periods for both adults and nestlings. Preliminary results showed our survival estimates were consistent with similar long-lived, slow reproducing raptors. Golden eagle mortalities in our study were a result of poisoning, intraspecific interaction and poaching. Our survival estimates are consistent with the stable density of breeding golden eagles in our study area and the primary causes of mortality differed from repository-based studies.