BLOOD LEAD LEVELS OF BALD AND GOLDEN EAGLES SAMPLED DURING AND AFTER HUNTING SEASONS IN THE GREATER YELLOWSTONE ECOSYSTEM

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EXTENDED ABSTRACT.—Recently, we discovered a significant amount of lead ingestion in Common Ravens (*Corvus corax*) from the southern Yellowstone Ecosystem during the large-game hunting seasons (Craighead and Bedrosian 2008). Our results provided further evidence that hunter discarded viscera of large-game animals is a source of lead in the ecosystem. However, there are many species that feed on hunter provided offal (Wilmers et al. 2003, Hunt et al. 2006) and are thus potentially exposed to lead throughout the duration of the hunting season (mid-September through December). We expanded the scope of our research to include both Bald Eagles (*Haliaeetus leucocephalus*) and Golden Eagles (*Aquila chrysaetos*). We measured the blood lead levels of both species during and after large-game hunts for two years. We tested 63 eagles (47 Bald Eagles and 16 Golden Eagles) and found a median blood lead level of 41.0 µg/dL (range = 3.2–523 µg/dL), 74.9% of all birds tested exhibited elevated lead levels (>20 µg/dL), and 14.3% exhibited levels associated with clinical poisoning (>100 µg/dL). We found no difference between Bald and Golden Eagles during the non-hunting season (median = 29.9 and 21.9 µg/dL, respectively; $P = 0.792$). We could not separate species during the hunting season due to inadequate sample size for Golden Eagles in this period (n = 3). The median blood lead levels for eagles during the hunting season was significantly higher than the non-hunting season (56.0 vs. 27.7 µg/dL, respectively; $P = 0.01$). We found no difference in blood lead levels for different age groups and found no evidence to suggest that increased blood lead levels decreased body condition, as measured by an index of regression residuals of bill depth and mass (Craighead and Bedrosian 2008). We were also able to collect data from a sample of nestling Bald Eagles (n = 9) and Golden Eagles (n = 1) to begin understanding baseline lead levels for these species. We found a median blood lead level of 0.3 µg/dL for nine nestlings from both species (range = 0.0 – 0.8 µg/dL). These results confirmed that both Bald and Golden Eagles are ingesting large amounts of lead during the hunting season in the southern Yellowstone Ecosystem. Further, the magnitude of lead in the blood of many eagles is extremely high and likely results in the death of some individuals (Pattee et al. 1981). While it is clear that eagles are ingesting large amounts of lead during the hunting season, the long-term, cumulative impacts of annual exposure are uninvestigated. *Received 24 June 2008, accepted 12 August 2008.*

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