

BLOOD-LEAD LEVELS OF FALL MIGRANT GOLDEN EAGLES IN WEST-CENTRAL MONTANA

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Lead has long been documented as a serious environmental hazard to eagles and other predatory opportunistic and scavenging avian species. Due to lead poisoning in the Bald Eagle (*Haliaeetus leucocephalus*) the use of lead shot for waterfowl hunting on federal and state lands was banned in 1991. More recently, lead poisoning from spent ammunition

has been identified as the leading cause of death in California Condors (*Gymnogyps californianus*), prompting the recent ban of lead ammunition within the “California Condor Recovery Zone.” Another study on Common Ravens (*Corvus corax*) in Wyoming has shown a direct correlation between elevated blood-lead levels and the on-set of rifle hunting season. Indeed, there is overwhelming evidence showing that lead is still prevalent in the environment and mounting data points to lead based rifle bullets as the primary source. We sampled blood from 42 Golden Eagles (*Aquila chrysaetos*) captured on migration during the fall of 2006 and 2007 to quantify a suite of possible heavy metal contaminants, with an emphasis on lead. Lead was measured in micrograms per deciliter (ug/dl) and ranged from 0 - 481 ug/dl. The blood-lead levels were broken in four exposure stages and our results were as follows: eagles with 0 -10 ug/dl ($N = 18$) were considered background, 10 – 60 ug/dl ($N = 19$) sub-clinically exposed, 60– 100 ug/dl ($N = 2$) clinically exposed and any eagle with ≥ 100 ug/dl ($N = 3$) were considered acutely exposed. In all, we found that 58 percent of the 42 Golden Eagles sampled had elevated blood-lead levels.