

Measuring lead and mercury exposure in Migratory Golden Eagles. A. Voulfson, M. Lacabe, A. Romain, F. Rosales, K. Correa, M. Finkelstein, University of California, Department of Microbiology and Environmental Toxicology, Santa Cruz, CA. B. Bedrosian, Teton Raptor Center, Wilson, Wyoming. Z. Glucs, University of California, Predatory Bird Research Group, Santa Cruz, CA. Golden Eagles (*Aquila chrysaetos*) suffer lead-related morbidity and mortality with exposures suspected to be from inadvertent consumption of lead-based ammunition when scavenging. Although blood is used as a common biomarker of lead exposure, blood only integrates lead exposure over ~2 weeks while sequential feather samples represent lead exposures over ~2 months. The goal of this project was: i) measure lead and mercury concentrations in paired blood and feathers samples to determine the relationship between these two biomarkers of exposure, and ii) measure lead and mercury concentrations in sequential feather samples to characterize the frequency and magnitude of exposures in migrant Golden Eagles. Paired feather (flight) and blood samples were collected from ~40 wild-trapped migrant eagles in Montana by the Teton Raptor Center in September and October of 2020 and 2021. Samples were analyzed using ICP mass spectrometry. Feather data illustrate that ~50% of eagles had a lead exposure event (~blood lead >5 µg/dL) over the timeframe of feather growth. Analyses also suggested a subset of eagles were exposed to elevated levels of mercury. Our results can be used to help understand the frequency of lead and mercury exposure in Golden Eagles and other avian scavengers in North America.