Poster presentation preferred

**Egg mercury concentration and egg size varies with position in the laying sequence in two songbird species.** C.A. Hartman, U.S. Geological Survey, Western Ecological Research Center, Dixon Field Station, Dixon, California, J.T. Ackerman,U.S. Geological Survey, Western Ecological Research Center, Dixon Field Station, Dixon, California, M.P. Herzog, U.S. Geological Survey, Western Ecological Research Center, Dixon Field Station, Dixon, California

In birds, mercury embryotoxicity occurs through the transfer of mercury from the mother to her eggs. Mercury transfer can vary by egg position in the laying sequence, with first laid eggs often exhibiting greater mercury concentrations than eggs laid later. We studied egg mercury concentration and burden by egg position in the laying sequence for two songbirds: tree swallows and house wrens. We found significant variation in egg mercury concentration and egg mercury burden with egg position in the laying sequence. Tree swallow mothers transferred the largest amount of mercury to the first egg, which had a mercury concentration 14% higher than the other eggs in the clutch. In contrast, egg mercury concentration of the first egg was not significantly higher than the other eggs in the clutch for house wrens. However, mercury concentration of the second laid house wren egg was 6% lower than eggs later in the laying sequence. These results indicate that in both species, after an initial relatively high transfer of mercury burden into the first egg, a much lower mercury burden is transferred to the second egg laid. But whereas this low mercury burden persisted among all subsequently laid tree swallow eggs, mercury burden of house wren eggs 3-8 returned to levels observed in the first egg laid. Despite the within-clutch variation, simulations showed that randomly selecting a single egg from each clutch would provide an estimate for egg mercury concentration within 10% of the population average derived using all eggs from all clutches.