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Platform Presentation

Title: Evaluating exposure patterns and impacts of methylmercury on freshwater-feeding bald eagles in Maine.

Christopher R. DeSorbo, BioDiversity Research Institute, 19 Flaggy Meadow Road, Gorham, ME 04038
(207) 839-7600 x 115

David C. Evers, BioDiversity Research Institute, Gorham, ME
Charles S. Todd, Maine Department of Inland Fisheries and Wildlife, Bangor, ME
Steven E. Mierzykowski, U.S. Fish and Wildlife Service, Old Town, ME
William Hanson, FPL Energy Maine Hydro, Lewiston, ME

Abstract: We present preliminary findings from year one of a three year (2004 – 2006) effort to evaluate spatial and temporal patterns of mercury exposure in bald eagle (*Haliaeetus leucocephalus*) nestlings and adults in Maine as well as to assess impacts on long-term productivity. Nestling blood displayed a significant negative correlation to productivity (3, 5, and 10-year). Nestling blood and adult feathers both reflected higher mercury exposure in lacustrine habitats compared to riverine sites. Statewide spatial patterns indicated that mercury exposure was highly variable with distinct “biological hotspots,” many of which were in agreement with other species sampled within the same area (e.g., common loons *Gavia immer* and yellow perch *Perca flavescens*). Preliminary comparisons to previous sampling efforts in 1991 – 1992 indicate little decline in methylmercury availability as indicated by eagle nestlings in lacustrine habitats; while riverine sites may display similar or possibly higher mercury levels than those over a decade ago. Shed adult feathers (primarily flight feathers) ranged from < 1 ppm to 87.4 ppm (fw) with a significant portion exceeding levels reported in other populations. Findings suggest that a portion of Maine’s freshwater-feeding bald eagle population is exposed to high levels of methylmercury, which may be limiting the recovery of this breeding population.