

Title: Raptors and contaminants – a tragedy of circumstance in 5 acts

Abstract. As apex predators, birds of prey have proven to be uniquely vulnerable to exposure to environmental contaminants. Risk factors include chemical properties, such as bioaccumulation potential, degradation half-life, and potency, as well as species-specific factors such as diet and toxicological sensitivity. I will present case studies of raptor exposure to and consequent effects of five contaminants, DDT, organophosphate pesticides, diclofenac, methylmercury, and polyfluoralkyl substances. When applicable, data from Hawk Ridge Bird Observatory here in Duluth will be presented. Each case will be reviewed with the goal of identifying generalities that may help avoid future problems or unique aspects of each case that make prevention difficult. Finally, I will review recent developments in ecotoxicology and discuss the potential role of organizations like Hawk Ridge to identify and respond to future contaminant crises.